

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

JEFF SCHMIDT,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No. 1:03-cv-1691
)	Judge Ricardo M. Urbina
)	
AMERICAN INSTITUTE OF PHYSICS,)	
)	
Defendant.)	

**PLAINTIFF’S SUPPLEMENTAL BRIEF IN OPPOSITION
TO DEFENDANT’S MOTION TO TRANSFER VENUE**

I, plaintiff *pro se* Jeff Schmidt, respectfully submit this supplemental brief in opposition to defendant AIP’s motion to transfer venue from the District of Columbia to the Southern Division of the District of Maryland.

History of AIP’s venue transfer effort

The history of AIP’s effort to transfer this case out of the District of Columbia and into Maryland is particularly important, because it explains why the Court took the unusual step of striking three filings and permitting this filing. And it explains why this filing is not a broad surreply but rather is a supplemental brief focused on a single issue.

- o On August 8, 2003, AIP removed the case from Superior Court in the District of Columbia to this federal court in the District of Columbia.
- o On October 22, 2003, AIP filed a motion to transfer the case from this federal court in the District of Columbia to federal court in Maryland.
- o On November 5, 2003, Plaintiff Jeff Schmidt filed an Opposition to AIP’s venue transfer motion.
- o On November 14, 2003, AIP filed a Reply to Schmidt’s Opposition.

- o On November 24, 2003, Schmidt wrote a letter to the Court asking for permission to submit documents that disprove new factual allegations in AIP's November 14, 2003, Reply Brief.
- o On December 10, 2003, the Court construed Schmidt's letter of November 24, 2003, as a motion for permission to file a surreply and allowed him to file an appendix to that motion.
- o On January 14, 2004, Schmidt filed an appendix to his motion for permission to file a surreply, containing documents that disprove factual allegations in AIP's Reply.
- o On February 6, 2004, AIP filed a document titled, "Defendant's Response to Plaintiff's Surreply." Attached to that document is a Certificate of Service for a nonexistent document titled, "Defendant's Response to Plaintiff's Motion for Leave to File Sur-Reply."
- o On February 17, 2004, Judge Urbina's law clerk Amy Dunathan made a conference telephone call to Schmidt and Teresa Wright, AIP's lawyer, to request a copy of Schmidt's November 24, 2003, motion for permission to file a surreply. After both parties agreed to provide copies of that document, Schmidt noted that AIP's February 6, 2004, filing had a very misleading title, and he asked if Dunathan could correct it. Dunathan replied that Schmidt would have to pursue the matter with Wright, and so Dunathan switched the parties to a two-way telephone connection. Schmidt and Wright then discussed the matter, but Wright refused to correct the title of AIP's February 6, 2004, Court filing. (Second Schmidt Affidavit, paragraph 10.)
- o On March 15, 2004, the Court took at face value the misleading title of AIP's February 6, 2004, filing, noted the illogical result (that there was "a motion for leave to file a sur-reply and a response to a sur-reply, but no sur-reply"), and therefore struck that filing along with Schmidt's motion for leave to file a surreply. In lieu of allowing Schmidt to file a surreply, the Court gave Schmidt leave to file a supplemental brief focusing on the single factual issue of where Schmidt worked for AIP. (Order of March 15, 2004, page 2.)

**Consequences of AIP's refusal to correct the misleading
title on its February 6, 2004, Court filing**

As the chronology above indicates, on February 17, 2004, I raised the issue of AIP's misleading February 6, 2004, Court filing. I did so out of fear that the document's improper title, "Defendant's Response to Plaintiff's Surreply," by implying that there had already been a surreply, would lessen the likelihood that I would be permitted to file a surreply. Indeed, those fears were realized when AIP's refusal to correct its misleading filing caused my motion for permission to file a surreply to be stricken. When AIP mistitled its filing, it was fully aware of the proper title, as evidenced by the fact that the proper title appears on the document's Certificate of Service: "Defendant's Response to Plaintiff's Motion for Leave to File Sur-Reply." (Second Schmidt Affidavit, paragraph 9.)

My November 24, 2003, motion for permission to file a surreply focuses on AIP's false statements about my work location but notes that "many other statements" in AIP's November 14, 2003, Reply Brief are false, too. A surreply would have allowed me to rebut all of the false statements in AIP's Reply Brief. However, because of AIP's refusal to correct the improper title on its February 6, 2004, Court filing, I am now only permitted to file a narrower document: a supplemental brief regarding where I worked for AIP. That might not seem like a problem, because where I worked is the central issue in the venue dispute. However, AIP's false statements on peripheral issues put the venue dispute in a context favorable to AIP. For the record, I list here some of the false statements in AIP's Reply Brief that this Supplemental Brief will not address. Should it please the Court, I would be happy to submit evidence backing these contentions:

1. AIP claims falsely that I wrote a book, *Disciplined Minds*, "instead of" doing my job. (Stith Affidavit, paragraph 21.) In actual fact, I did my job throughout my 19 years of employment by AIP. (Second Schmidt Affidavit, paragraph 11.)

2. AIP claims falsely that it dismissed me for “using ‘stolen’ company time” to write *Disciplined Minds*. (AIP’s Reply Brief, page 2.) That charge is a pretext.

3. AIP claims falsely that it fired me because I “publicly proclaimed” that I had stolen work time “from AIP” to write *Disciplined Minds*. (AIP’s Reply Brief, page 1.) However, the supposedly offending text in *Disciplined Minds* neither communicates that to the public nor attempts to do so, as it is set in New York City, not College Park, Maryland, and makes no mention of AIP. (AIP’s Reply Brief, Exhibit C.)

4. AIP claims falsely that my employment was at-will. (AIP’s Reply Brief, pages 1 and 2.) AIP must abide by its written and oral promises. (Second Schmidt Affidavit, paragraph 12.)

5. AIP claims falsely that it never put a gag order on me. (AIP’s Reply Brief, page 5.) In actual fact, it did, and the event that prompted it to do so occurred at a *Physics Today* staff meeting in the District of Columbia. (Second Schmidt Affidavit, paragraph 12.)

6. AIP claims falsely that I worked 2/3 time and that I did so at my request. (AIP’s Reply Brief, page 8.) My request was forced by AIP through a work-load increase, and I was left working more than 2/3 time, but for 2/3 pay. (Second Schmidt Affidavit, paragraph 14.)

7. AIP claims falsely that “Dr. Stith frequently attends *Physics Today* staff meetings.” (AIP’s Reply Brief, page 9.) James Stith rarely attended such meetings. (Second Schmidt Affidavit, paragraph 15.)

8. AIP claims falsely that it does not pay the salary of a congressional staff member in the District of Columbia. (Stith Affidavit, paragraph 19.) Through its long-standing “AIP Congressional Science Fellowship Program,” AIP hires a physicist, at an annual salary of \$50,000 plus benefits, to work as a congressperson’s staff member in the District of Columbia. Furthermore, through its “AIP State Department Science Fellowship Program,” AIP hires more

than one physicist to work at the State Department in the District of Columbia. Stith's sworn statement is untrue. (Second Schmidt Affidavit, paragraph 16.)

9. In support of AIP's claim that Plaintiff "never has filed a charge or complaint against AIP with any administrative agency located in the District of Columbia," AIP Executive Director and CEO Marc H. Brodsky swore falsely that I did not file my National Labor Relations Board charge in the District of Columbia. (Brodsky Affidavit, paragraph 5.) In actual fact, I filed the charge in person, with NLRB representative Ricardo Morillas, at the NLRB's District of Columbia office, at 1099 14th Street NW, Suite 5530, on November 27, 2000, and subsequently met with NLRB investigator Tom McCarthy four times at that same District of Columbia office — on December 11, 2000; December 27, 2000; January 3, 2001; and January 4, 2001. I have never been to an NLRB office in Baltimore or anywhere else in Maryland. (Second Schmidt Affidavit, paragraph 17.) The NLRB fax that Brodsky submitted (Brodsky Affidavit, Exhibit A) to prove his claim is marked at the top as originating at "202-208-3013 NLRB WRO" — the NLRB's Washington Regional Office.

10. AIP claims falsely that its venue transfer efforts have nothing to do with forum shopping (AIP's Reply Brief, page 2), leaving one to wonder why it is spending tens of thousands of dollars in law firm fees to move the case just a few miles. AIP then says that my opposition to its attempt to switch venue "indicates a keen awareness of the 'demographics' of the District of Columbia and the District of Maryland." (AIP's Reply Brief, page 12.)

11. AIP incorrectly dismisses as "nonsense" my statement that my witnesses from New York and Virginia would be more likely to testify if the trial were held in Washington, D.C., than if it were held in Greenbelt, Maryland. (AIP's Reply Brief, page 12.)

12. AIP claims falsely that the relevant documents for this case are in Maryland. Obviously, I have relevant documents and I am in the District of Columbia.

AIP's repeated assertion that Plaintiff worked in Maryland is false

In my Opposition to AIP's venue transfer motion, I explained that I worked for AIP in my home office in the District of Columbia. I didn't submit supporting documents, because I never imagined that AIP would dispute this fact. My work location, like that of every staff member, was well known to everyone in the organization, as it had to be, because my work required daily communication with staff members and with management. (Second Schmidt Affidavit, paragraph 18.)

Yet, throughout its Reply Brief, AIP claims that I worked in Maryland. AIP puts great emphasis on this false claim, through both strong language and repetition, making at least 21 false statements about where I worked: One on page 2; two on page 3; one on page 4; two on page 5; two on page 6; seven on page 7; four on page 8; one on page 9; and one on page 12. Here, as examples, are some of AIP's false statements from pages 6 and 7 of its Reply Brief:

1. "Plaintiff's assertion that he primarily worked out of his home in the District of Columbia, rather than at AIP's College Park offices, is patently untrue." (AIP's Reply Brief, Page 6.)
2. "AIP has no knowledge that Plaintiff worked from home." (AIP's Reply Brief, page 6.)
3. "Plaintiff Worked For AIP In Its College Park, Maryland Offices." (AIP's Reply Brief, page 7.)
4. "Mr. Schmidt's statement that he 'worked for AIP in the District of Columbia from July 25, 1997 until AIP fired me on May 31, 2000' is entirely false." (AIP's Reply Brief, page 7.)
5. "From 1993 until 2000, Mr. Schmidt worked for AIP in its College Park, Maryland office." (AIP's Reply Brief, page 7.)
6. "Mr. Schmidt implies that from 1997 through 2000, AIP requested, or at least condoned, that he work from home on a regular basis. This is false." (AIP's Reply Brief, page 7.)
7. "AIP never agreed to permit Mr. Schmidt to work from home on a regular basis..." (AIP's Reply Brief, page 7.)
8. "...and has no knowledge that he did so." (AIP's Reply Brief, page 7.)
9. "AIP had no arrangement or agreement with Mr. Schmidt that would permit him to work from home as a rule." (AIP's Reply Brief, page 7.)

AIP may be surprised to learn that I have many AIP-generated weekly work-location schedules that show where every staff member worked every day. I have 38 pages of these schedules from the relevant period. Exhibit A contains these schedules and an index. These documents establish beyond doubt that I worked in the District of Columbia just as I stated in my Opposition, and not in Maryland as AIP has been insisting.

AIP did see these 38 schedules, in a now-stricken Court filing. AIP did not respond by saying, OK, you're right, you worked in the District of Columbia. Rather, AIP in essence said, You've proved us wrong only for "some portion of 1997 and 1998," not for the entire period in question, which is July 25, 1997, to May 31, 2000. Thus, I am forced to submit further documentary evidence herewith, to cover the period from 1998 to 2000. That evidence is Exhibit B, which is 33 e-mail messages and notes responding to AIP's weekly request that all staff members report their schedules for the following week. These 33 documents, together with the 38 documents in Exhibit A, show that my workplace was in the District of Columbia during the entire period in question, not just for "some portion of 1997 and 1998." The 71 documents show that I visited AIP's Maryland offices only a few days each month, exactly as I stated in my Opposition.

Plaintiff's work location was publicized and well known by AIP staff and management

I worked for AIP in the District of Columbia for years, and so it is inconceivable that this was not known by *Physics Today* division head Randolph A. Nanna and by higher-level AIP managers Marc H. Brodsky, James H. Stith, and Theresa Braun. The weekly work-location schedules were posted prominently (not on bulletin boards that contained other postings) in many places in the hallways outside the *Physics Today* offices. (Second Schmidt Affidavit, paragraph 19.) All of the above-named managers walked those hallways frequently. (Second Schmidt Affidavit, paragraph 20.) Each of them must have seen the work-location schedules hundreds of

times over the years. Long before my dismissal, hard-copy distribution of the weekly work-location schedules was augmented by e-mail distribution. The e-mail distribution list included not only all staff and managers in AIP's *Physics Today* division, but also higher-level AIP managers Brodsky and Stith, who wished to be kept informed of the whereabouts of their *Physics Today* division managers.

Yet AIP, in its mistitled and now-stricken filing of February 6, 2004, asked the Court to believe not only that its top managers were unaware that I worked in the District of Columbia, but also that they didn't even know that weekly work-location schedules ever existed. To complete its explanation of its false statements, AIP stated that Stephen G. Benka, one of its two *Physics Today* division managers, was out of the office when it prepared its Motion to Transfer Venue and also when it prepared its Reply Brief. However, Benka was also out of the office when AIP prepared its most recent filing (the now-stricken filing of February 6, 2004), and yet he clearly participated extensively in that effort. Even if AIP's explanation were believable, it would still not be complete, because AIP did not even attempt to explain the apparent simultaneous long-term unavailability of Randolph A. Nanna, the top *Physics Today* division manager, who was present at and participated in my dismissal. (Second Schmidt Affidavit, paragraph 21.)

In my Opposition to AIP's Motion to Transfer Venue, I stated that the single Affidavit upon which AIP relied contained gross misrepresentations of fact. (Opposition, page 4.) AIP responded by stating that the signer of the Affidavit, AIP Director of Human Resources Theresa Braun, "is well aware of Mr. Schmidt's work history." (AIP's Reply Brief, page 6, footnote.) If that is true, then why did Braun make false assertions about where I worked? And if it is not true, then why did AIP base its Motion on her testimony?

For a statement by someone who truly is aware of my work history, because he witnessed it first-hand, please read the Affidavit of Paul Elliott, herewith. The Affidavit of Paul Elliott is an integral part of this Supplemental Brief.

Plaintiff worked in the District of Columbia continuously

While I have many weekly work-location schedules (Exhibit A), I do not have a complete set. AIP used this fact (in its now-stricken filing of February 6, 2004) as an opportunity to hypothesize that I have more such documents but chose to submit only the ones that proved my claim that I worked in the District of Columbia. AIP submitted no evidence for this self-serving hypothesis, because none exists. However, it is likely that there does exist evidence *disproving* AIP's hypothesis, because AIP subscribes to a computer archiving service and could, albeit through some effort, assemble a complete set of weekly work-location schedules for the period in question. (The only other schedules I have cover weeks prior to July 25, 1997, and so are not relevant to my claim that I worked in the District of Columbia from that date forward.)

AIP also used the incomplete coverage of the available weekly work-location schedules as an opportunity to assert that during one gap in the coverage, I “worked in College Park daily.” (Exhibit C, paragraph 13.) AIP said that during this period the staff was preparing the May 1998 issue of *Physics Today*, which was the magazine's 50th anniversary issue. Once again, AIP is not telling the truth, because I continued to work in the District of Columbia during preparation of the May 1998 issue. (Second Schmidt Affidavit, paragraph 22.) Much of the extra work in preparing that issue consisted of going through thousands of pages of photocopies of material from a decade of back issues of the magazine, to create a retrospective. AIP shipped the thousands of pages of photocopies to my District of Columbia home office, and that is where I did the work. (Second Schmidt Affidavit, paragraph 23.) Just as AIP was surprised that I had the weekly work-location schedules, AIP will again be surprised that I have proof of my work location during gaps in those

schedules. Thus, as I describe below, Exhibits D, E, F, and G show that I continued to work in the District of Columbia during preparation of the May 1998 issue.

Exhibit D is the shipping label that AIP used to send a five-pound package of anniversary issue material to my District of Columbia office. Exhibit D also contains a contemporaneous post-it note through which I helped to arrange for AIP to send the decade of material to my District of Columbia office.

Exhibit E is one of the overnight courier labels that AIP prepared for my coworker Warren Kornberg to use to send anniversary issue material to me in the District of Columbia. Kornberg and I worked together on the decade retrospective for the May 1998 issue. He and I communicated almost exclusively by telephone, fax, e-mail, and overnight courier — because, as always, I was working in my District of Columbia office and was not in AIP’s Maryland office. (Second Schmidt Affidavit, paragraph 24.)

Exhibit F is the transmission report for a fax that I sent from the District of Columbia to AIP consultant Liz Fitzgerald, who was working on the May 1998 issue.

Exhibit G is an e-mail exchange between me and my supervisor, Stephen G. Benka — “Subject: Whereabouts.” My e-mail message informs Benka that on one particular day during preparation of the anniversary issue, I would be doing my *Physics Today* work on a late schedule, and therefore staff members could phone me at home later than the usual close of business on that day. On or about April 1, 1998, Benka telephoned me at my District of Columbia office to inform me that he had reassigned me from work on the May 1998 issue to work on subsequent issues. (Second Schmidt Affidavit, paragraph 25.) This reassignment was controversial within the *Physics Today* division, and so it is inconceivable that Benka does not remember making that telephone call.

Clearly, Benka knows very well that I worked on the May 1998 issue in my usual home office in the District of Columbia. Thus, he knowingly swore to a false statement when he asserted in an affidavit that I “worked in College Park daily” during preparation of the May 1998 issue. (Exhibit C, paragraph 13.)

In Exhibit C, AIP also grossly misstates the time period during which I worked on the May 1998 issue, saying it was “March 1998 through May 1998.” (Exhibit C, paragraph 13.) I did no work on the issue after March 31, 1998, because of the reassignment. (Second Schmidt Affidavit, paragraph 26.) I was thus exempted from the May 1998 issue’s production work and therefore had no special reason to visit AIP’s Maryland office. The May 1998 issue was completed and delivered to the printer in mid-April 1998.

Following the July 1997 change of my workplace from AIP’s facility in Maryland to my home office in the District of Columbia, AIP did not remove my nameplate from the office that I had used at its Maryland facility. However, that office was no longer exclusively mine. It became an office for use by *all* out-of-state *Physics Today* staff members during their Maryland visits. Thus, the office was used by *Physics Today* staff members Toni Feder (North Carolina), Irwin Goodwin (District of Columbia), Jean Kumagai (New York), Barbara Levi (California), and me. (Second Schmidt Affidavit, paragraph 27.)

Why AIP employed Plaintiff in the District of Columbia and benefited by doing so

On July 25, 1997, the date of birth of my daughter, I became eligible under the Family and Medical Leave Act to take a long leave of absence, without penalty, from my employment at the American Institute of Physics. If I had chosen to take the leave, then AIP would have faced the task of finding a replacement willing to accept a non-permanent job. Such limited employment would not appeal to professionals seeking to advance their careers, and so it would have been difficult for AIP to find a good editor to fill in.

Also, I was considered to be the top article editor at *Physics Today*, and as such would have been even more difficult to replace. High praise for my work came from both outside and inside the magazine. Exhibit H is a letter from D. Allan Bromley, a nuclear physicist who became a presidential science advisor, praising my extensive work on his manuscript. Exhibit I contains examples of my work product — edited feature articles — as returned to me after I submitted them to my supervisor, Stephen G. Benka. The documents show Benka’s handwritten comments on my work: “This article is very good — you’ve brought it a long way”; “Nicely done”; “A terrific article!”; “Another excellent article!”; and so on.

Thus, AIP had a clear interest in keeping me working full time and without interruption. And AIP accomplished that, to its benefit, by changing the terms of my employment. (Second Schmidt Affidavit, paragraph 28.) Thus, from July 25, 1997, until I was dismissed on May 31, 2000, AIP employed me in the District of Columbia. This was not the first time that AIP had changed the terms of my employment to retain my services. The first time was when AIP switched my employment from New York to Maryland in 1993.

Nor was this the first time that AIP had changed a Maryland staff member’s place of employment to retain the staff member’s services. Thus, for example, *Physics Today* staff member Toni Feder’s employment was switched from Maryland to North Carolina, so that she could spend more time with her boyfriend.

AIP management routinely communicated with Plaintiff in his District of Columbia office and paid his District of Columbia office expenses

Every month, my supervisor Stephen G. Benka asked each staff editor to rank proposed items for the magazine’s Physics News Update department, which he edited. He brought hard copies of the proposed items to the offices of every staff editor who worked at AIP’s Maryland facility, and he e-mailed the items to the staff editors whom the magazine employed in home offices

outside of Maryland. Exhibit J contains five such e-mails that I received from Benka. Note that these e-mails were sent to only three members of the staff: Barbara Levi (in her home office in California), Jeff Schmidt (in my home office in the District of Columbia), and Toni Feder (in her home office in North Carolina). Note also that the final one was sent by Benka just a month before I was fired. It is clear that Benka was fully aware that my workplace was in the District of Columbia.

Every month, my supervisor Stephen G. Benka asked each staff editor to review the magazine's table-of-contents page before it was released to the printer. The routine was that Benka or his secretary would fax the material to me in the District of Columbia and expect me to phone Benka with my comments within a matter of hours, because the table of contents was the last item to go to the printer. Benka knew where I was working on an hour-to-hour basis, and it was almost always in the District of Columbia. Exhibit K is the March 1998 issue's table-of-contents page, as it was faxed to me in the District of Columbia at 11:10 AM on February 12, 1998.

Like the other out-of-state *Physics Today* employees, I routinely participated in staff meetings by speakerphone, from my District of Columbia office. The meetings were held in the conference room at AIP's College Park office, with the Maryland employees present in person and the speakerphone on the table. Typically on the speakerphone with me were coworkers Irwin Goodwin (from his office in the District of Columbia), Jean Kumagai (from her home office in New York), Barbara Levi (from her home office in California), and Toni Feder (from her home office in North Carolina). (Second Schmidt Affidavit, paragraph 29.) Exhibit L is a sampling of e-mail messages arranging for me to participate in *Physics Today* staff meetings by speakerphone from my District of Columbia office. I am submitting one such message from each of the years that I worked in the District of Columbia: 1997, 1998, 1999, and 2000. Note that the meeting in the example from 2000 took place less than one month before I was fired.

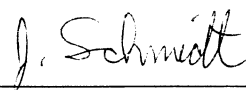
AIP paid my District of Columbia office expenses. For example, Exhibit M is an AIP reimbursement check stub with the receipts for photocopying and faxing that I submitted to get the reimbursement. The largest District of Columbia office expense, by far, was for sending material to article authors and to AIP's Maryland office by the overnight courier Federal Express. AIP covered all such costs.

My regular workplace was in the District of Columbia. It was not in Maryland as AIP asserts repeatedly in its Reply Brief. I was employed in the District of Columbia by agreement with AIP, and to AIP's benefit. All of AIP's out-of-state employees attend some meetings at AIP's Maryland facility and have important decisions affecting them made by managers at AIP's Maryland facility, but that does not make them Maryland employees. They may be employed *from* Maryland, but they are not employed *in* Maryland. My supervisor treated me like the other out-of-state employees. What would have needed to be different for AIP to acknowledge that my place of employment was the District of Columbia? If anything is missing, it is not actual practice, but simply the acknowledgement itself. Despite the countless ways in which both AIP and I behaved like my place of employment was the District of Columbia, my supervisor said in his Affidavit of February 5, 2004 (Exhibit C, paragraph 11), "I never considered him to be employed in the District of Columbia." That is like saying, "I never considered that animal to be a duck."

For the reasons given in my Opposition and in this Supplemental Brief, I respectfully ask the Court to deny AIP's Motion to transfer this case out of the District of Columbia.

Dated: March 31, 2004

Respectfully submitted,

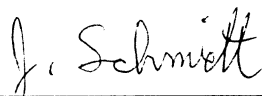


Jeff Schmidt (Plaintiff *pro se*)
3003 Van Ness Street NW #W406
Washington, DC 20008

CERTIFICATE OF SERVICE

On this 31st day of March 2004, I sent the following party via first-class mail a copy of the foregoing Plaintiff's Supplemental Brief in Opposition to Defendant's Motion to Transfer Venue, Second Affidavit of Jeff Schmidt, and Affidavit of Paul Elliott:

Teresa Burke Wright, Esq.
Jackson Lewis LLP
8614 Westwood Center Drive, Suite 950
Vienna, VA 22182



Jeff Schmidt (Plaintiff *pro se*)
3003 Van Ness Street NW #W406
Washington, DC 20008

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

RECEIVED
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DISTRICT OF COLUMBIA

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HANCY M.
MAYER-WHITTINGTON
CLERK

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AMERICAN INSTITUTE OF PHYSICS,

Defendant.

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History of AIP's venue transfer effort

The history of AIP's effort to transfer this case out of the District of Columbia and into Maryland is particularly important, because it explains why the Court took the unusual step of striking three filings and permitting this filing. And it explains why this filing is not a broad surreply but rather is a supplemental brief focused on a single issue.

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Plaintiff(s),

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Civil Case No: **03-1691 (RMU)**

**AMERICAN INSTITUTE OF
PHYSICS,**

Defendant(s).

NOTICE REGARDING BULKY EXHIBIT

Pursuant to the procedures for filing documents electronically, as outlined in the previous Order of the Court, this Notice serves as notification that exhibits to plaintiff's Supplemental Brief in Opposition to Defendant's Motion to Transfer Venue have been filed in paper form in the Clerk's Office. It is available for public viewing and copying between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday.

NANCY MAYER-WHITTINGTON

Clerk

Date: March 31, 2004

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

JEFF SCHMIDT,)	
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Plaintiff,)	
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v.)	Civil Action No. 1:03-cv-1691
)	Judge Ricardo M. Urbina
)	
AMERICAN INSTITUTE OF PHYSICS,)	
)	
Defendant.)	

SECOND AFFIDAVIT OF JEFF SCHMIDT

DISTRICT OF COLUMBIA)	
)ss.:	
)	

Jeff Schmidt, being duly sworn, deposes and says:

1. I make the statements herein based upon my own personal knowledge, except such matters as are alleged on information and belief, and as to those matters, I believe them to be true.
2. I submit this Affidavit in support of Plaintiff's Supplemental Brief in Opposition to Defendant's Motion to Transfer Venue.
3. I have resided in the District of Columbia for the past 10 years.
4. AIP was incorporated in New York and most of its employees work in New York.
5. AIP employed me for 19 years, first in New York (1981-1993), then in Maryland (1993-1997), and then in the District of Columbia (1997-2000).
6. I worked for AIP in the District of Columbia from July 25, 1997, until AIP fired me on May 31, 2000.

7. Nearly all the operative events in this action occurred while I worked for AIP in the District of Columbia, between July 25, 1997, and May 31, 2000.

8. From 1981 to 1997, when I worked for AIP in New York and Maryland, AIP provided me with my own private office located at *Physics Today* magazine's main office, first in New York and then in Maryland.

9. On February 6, 2004, AIP submitted to the Court a document titled, "Defendant's Response to Plaintiff's Surreply." Attached to that document is a Certificate of Service for a nonexistent document titled, "Defendant's Response to Plaintiff's Motion for Leave to File Surreply."

10. On February 17, 2004, Judge Ricardo M. Urbina's law clerk Amy Dunathan made a conference telephone call to me and Teresa Wright, AIP's lawyer, to request a copy of my November 24, 2003, motion for permission to file a surreply. After Wright and I agreed to provide copies of that document, I noted that AIP's February 6, 2004, Court filing had a very misleading title, and I asked if Dunathan could correct it. Dunathan replied that I would have to pursue the matter with Wright, and so Dunathan switched Wright and me to a two-way telephone connection. Wright and I then discussed the matter, but Wright refused to correct the title of AIP's February 6, 2004, Court filing.

11. I did my job throughout my 19 years of employment by AIP. AIP's claim that I wrote a book "instead of" doing my job is false.

12. During my employment, AIP modified the preexisting at-will employment arrangement in response to employee requests for increased job security.

13. AIP put a gag order on me, and the event that prompted it to do so occurred at a *Physics Today* staff meeting in the District of Columbia.

14. AIP increased my work quota, forcing me to, in essence, seek a salary reduction to avoid giving AIP an excuse to fire me. I requested a “reduction” to 2/3 of the increased work load — and to 2/3 of my previous salary.

15. James H. Stith rarely attended *Physics Today* staff meetings. AIP’s claim that “Dr. Stith frequently attends *Physics Today* staff meetings” is false.

16. Through its long-standing “AIP Congressional Science Fellowship Program,” AIP hires a physicist, at an annual salary of \$50,000 plus benefits, to work as a congressperson’s staff member in the District of Columbia. Through its “AIP State Department Science Fellowship Program,” AIP hires more than one physicist to work at the State Department in the District of Columbia. Thus, AIP’s claim that it does not pay the salary of a congressional staff member in the District of Columbia is false.

17. I filed my National Labor Relations Board charge in person, with NLRB representative Ricardo Morillas, at the NLRB’s District of Columbia office, at 1099 14th Street NW, Suite 5530, on November 27, 2000, and subsequently met with NLRB investigator Tom McCarthy four times at that same District of Columbia office — on December 11, 2000; December 27, 2000; January 3, 2001; and January 4, 2001. I have never been to an NLRB office in Baltimore or anywhere else in Maryland. AIP Executive Director and CEO Marc H. Brodsky’s sworn statement that I filed my National Labor Relations Board charge in Maryland is false.

18. My work for AIP required daily communication with other staff members and with management. Thus, my work location was well known to everyone in the organization.

19. My work location was shown on weekly AIP-generated charts, which were posted prominently (not on bulletin boards that contained other postings) in many places in the hallways outside the *Physics Today* offices.

20. *Physics Today* division head Randolph A. Nanna and higher-level AIP managers Marc H. Brodsky, James H. Stith, and Theresa Braun frequently walked the hallways outside the *Physics Today* offices.

21. Randolph A. Nanna, the top *Physics Today* division manager, was present at and participated in my dismissal.

22. I continued to work in the District of Columbia, as usual, during preparation of the May 1998 issue of *Physics Today*.

23. Much of the work in preparing the May 1998 issue of *Physics Today* consisted of going through thousands of pages of photocopies of material from a decade of back issues of the monthly magazine, to create a retrospective. AIP shipped the thousands of pages of photocopies to my District of Columbia home office, and that is where I did the work.

24. My coworker Warren Kornberg and I worked together on one of the decade retrospectives for the May 1998 issue. He and I communicated almost exclusively by telephone, fax, e-mail, and overnight courier. That was because, as always, I was working in my District of Columbia office and was not in AIP's Maryland office.

25. On or about April 1, 1998, my supervisor Stephen G. Benka telephoned me at my District of Columbia office to inform me that he had reassigned me from work on the May 1998 issue to work on subsequent issues.

26. I did no work on the May 1998 issue after March 31, 1998, because of the reassignment.

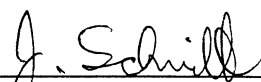
27. Following the July 1997 change of my workplace from AIP's Maryland facility to my District of Columbia home office, AIP did not remove my nameplate from the office that I had used in Maryland. However, that office was no longer exclusively mine. It became an office for use by *all* out-of-state *Physics Today* staff members during their Maryland visits. Thus, the office was

used by *Physics Today* staff members Toni Feder (North Carolina), Irwin Goodwin (District of Columbia), Jean Kumagai (New York), Barbara Levi (California), and me.

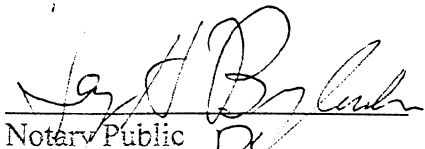
28. My daughter was born on July 25, 1997. AIP preferred that I continue working full time and without interruption, and arranged for me to do so by changing my terms of employment. Thus, from July 25, 1997, until I was dismissed on May 31, 2000, AIP employed me in the District of Columbia.

29. Like the other out-of-state *Physics Today* employees, I routinely participated in staff meetings by speakerphone, from my District of Columbia home office. The meetings were held in the conference room at AIP's College Park office, with the Maryland employees present in person and the speakerphone on the table. Typically on the speakerphone with me were coworkers Irwin Goodwin (from his office in the District of Columbia), Jean Kumagai (from her home office in New York), Barbara Levi (from her home office in California), and Toni Feder (from her home office in North Carolina).

30. During my employment, most of *Physics Today's* out-of-state employees worked in home offices. They visited AIP's Maryland facility with a frequency inversely proportional to their distance from Maryland. Thus, Jean Kumagai (New York) or Toni Feder (North Carolina) typically worked a few days each month at AIP's Maryland offices, as did Irwin Goodwin (District of Columbia), while Barbara Levi (California) visited Maryland less frequently.


JEFF SCHMIDT

Sworn to before me this
31st day of March 2004.


Notary Public

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

JEFF SCHMIDT,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No. 1:03-cv-1691
)	Judge Ricardo M. Urbina
)	
AMERICAN INSTITUTE OF PHYSICS,)	
)	
Defendant.)	

AFFIDAVIT OF PAUL ELLIOTT

DISTRICT OF COLUMBIA)	
)ss.:	
)	

Paul Elliott, being duly sworn, deposes and says:

1. I make the statements herein based upon my own personal knowledge, except such matters as are alleged on information and belief, and as to those matters, I believe them to be true.

2. I submit this Affidavit in support of Plaintiff's Supplemental Brief in Opposition to Defendant's Motion to Transfer Venue.

3. I worked as a staff editor at *Physics Today* magazine for the American Institute of Physics (AIP) for nearly five years, from July 1995 until I resigned in March 2000.

4. Throughout my years as a *Physics Today* editor, I performed my work at AIP's headquarters building in College Park, Maryland, where I had a private office for my exclusive use in *Physics Today's* suite of offices.

5. During my first two years at AIP, the adjoining private office was occupied by Jeff Schmidt, who at that time had been an AIP employee for some 14 years and was the magazine's lead articles editor.

6. During those two years, I worked very closely with Mr. Schmidt, as was required by both our individual and joint editorial responsibilities. It was customary for us to interact several or sometimes many times a day, depending on the course of the magazine's monthly production cycle.

7. Over time, I came to conclude that Mr. Schmidt was the magazine's lead workaholic. He met all of his deadlines and kept all of his promises in his work-related interactions with me, and, from what I knew and observed, met all of his other obligations too, often well in advance of his deadlines. He was businesslike but collegial and easy going, rarely engaged in social chitchat, and rarely left his office for lunch. He gave me the impression of being a private person whose major concern was getting his work done.

8. Over that same two-year period, though, it also became evident to me that Mr. Schmidt did have another work-related concern, which manifested itself at staff meetings — namely, the ways in which the magazine was operated and managed. He made it clear that he believed that the staff should be allowed to be more involved in, among other things, determining the content of the magazine and selecting new staff members (he pushed in particular for candidate diversity, as well as competency). And management made it just as clear that it did not appreciate his outspokenness.

9. Looking back on that two-year period, I find it difficult to believe AIP's apparent allegation that Mr. Schmidt was using his workdays at AIP to write a book of his own. Not only do I fail to understand how he would have had the time to do that, but I also do not believe he could have done so without my knowing about it, given how closely we worked together, both editorially and physically. For the record, I did not learn about the existence of his book until April 2000 (the month after I resigned), and at that time, I simply surmised that he had done what so many other writers with day jobs have done — namely, work nights and weekends on their own projects.

10. My working relationship with Mr. Schmidt changed in July 1997, when he began doing his assigned *Physics Today* editorial work in his home office in Washington, D.C. My understanding then

was that he and AIP had mutually agreed to change the terms of his employment as a consequence of the birth of his daughter. Clearly, both parties benefited from the arrangement, under which Mr. Schmidt could continue to work full time and without interruption and to make a significant contribution to the magazine.

11. The principal change in my working relationship with Mr. Schmidt, starting in July 1997, was that we had to switch to using communication means other than walking into each other's offices. Consequently, I made frequent telephone calls to him in his Washington, D.C., office from AIP's Maryland facility; received telephone calls from him while he was working in his Washington, D.C., office; exchanged frequent e-mail messages and occasional fax materials with him during working hours; occasionally sent him magazine galleys in Washington, D.C.; and occasionally delivered work materials to him and conferred with him in person in Washington, D.C. (His home office was conveniently located halfway between my residence in Alexandria, Virginia, and AIP's Maryland offices in College Park.)

12. My having to essentially work with Mr. Schmidt at a distance neither surprised me nor caused me to have to do anything unfamiliar to me. By July 1997, I was well-used to such an arrangement because I had already spent two years working with several other *Physics Today* editors under similar conditions, and I readily assumed that having staff editors working out-of-state in their own offices was a long-time AIP practice.

13. From July 1997 until March 2000, I routinely communicated and worked with such out-of-state *Physics Today* staff members as Toni Feder, who worked in her home office in Durham, North Carolina; Jean Kumagai, who worked in her home office in New York City; Irwin Goodwin, who worked in AIP's satellite office in Washington, D.C.; Barbara Levi, who worked in her home office in Santa Barbara, California; and Jeff Schmidt, who worked in his home office in Washington, D.C.

14. During the 1997-2000 period, Mr. Schmidt and *Physics Today*'s other out-of-state employees spent little time in the magazine's offices at AIP's College Park headquarters building, according to my own recollections, which are based on my having been there on almost every workday during that period (I never took any sick leave and took almost no vacation days — but did take an occasional comp day).

15. From time to time during the 1997-2000 period, one or more of the out-of-state *Physics Today* employees would be present to attend a meeting or for some other purpose at AIP's College Park headquarters building. For the annual *Physics Today* Advisory Committee meeting at which the magazine would undergo a major review, all of the out-of-state editors were usually present, whereas at the magazine's staff meetings — nominally set for once a month, but often held on a more attenuated or erratic schedule — few or no out-of-state editors were in attendance (but some of them would participate by speakerphone from their home offices). To the best of my recollection, the out-of-state editors most likely to visit the AIP headquarters building regularly in College Park were Toni Feder (Durham, North Carolina) and Jean Kumagai (New York City), who had to be there for the closing of each issue. Barbara Levi (Santa Barbara, California) was certainly the least frequent visitor, and I would say that Mr. Schmidt and Irwin Goodwin (Washington, D.C.) were both there more than Ms. Levi but less than Ms. Feder and Ms. Kumagai (making allowances for Ms. Kumagai having resigned from *Physics Today* in the late fall of 1999).

16. During the 1997-2000 period, I would occasionally encounter Mr. Schmidt in the magazine's College Park offices when he visited to pick up or deliver materials.

17. During the 1997-2000 period, what had previously been Mr. Schmidt's personal office (the one next to mine) became, de facto, an office for visitors, usually out-of-state *Physics Today* employees. I saw the office used, for example, by *Physics Today* staff members Toni Feder (in from Durham, North Carolina), Irwin Goodwin (in from Washington, D.C.), Jean Kumagai (in from New

York City), Barbara Levi (in from Santa Barbara, California), and Mr. Schmidt (in from Washington, D.C.).

18. Starting in September 1999, when Mr. Schmidt became not only an out-of-state employee but also a part-time one working two-thirds the normal work week, what had previously been his personal office adjoining mine in the *Physics Today* office suite was used routinely on a part-time basis by an editor named Peter Pulsifer, although I seem to recollect that Mr. Schmidt's nameplate remained on the door.

19. During the 1997-2000 period, Mr. Schmidt, like the other out-of-state *Physics Today* employees, routinely participated in AIP-based staff meetings by speakerphone. The meetings were held in the conference room at AIP's College Park headquarters building, with me and the other Maryland employees present in person, and Mr. Schmidt and the other out-of-state editors on the speakerphone. Typically on the speakerphone were *Physics Today* staff members Irwin Goodwin (from his AIP satellite office in Washington, D.C.), Jean Kumagai (from her home office in New York City), Barbara Levi (from her home office in Santa Barbara, California), Toni Feder (from her home office in Durham, North Carolina), and Mr. Schmidt (from his home office in Washington, D.C.).

20. During the 1997-2000 period, Mr. Schmidt's work schedule and workday whereabouts were well known, in that such information was collected for all the magazine's staff members and presented in weekly AIP-generated charts that were both disseminated by e-mail and posted in multiple places throughout the *Physics Today* office suite.

21. During the 1997-2000 period, to the best of my knowledge, Mr. Schmidt continued to meet his primary work obligations in terms of both quantity and quality while working in his home office in Washington, D.C.

22. I know of only one instance during my five years at AIP in which AIP management took overt exception to what Mr. Schmidt produced, and that involved his work on a special project in

conjunction with preparation of the May 1998 50th-anniversary issue of the magazine. Like several other editors, Mr. Schmidt was given a research assignment that provided some latitude for the exercise of the editor's judgment. Working in his home office, he completed the first part of the task late in March 1998. However, on seeing and disapproving of Mr. Schmidt's initial recommendations, management transferred the assignment to another editor to get it finished in time for the special issue to be sent to the printer in mid-April. I remember both the disapproval and transfer because management was quite vocal and public on the matter, which was why and how the editors working in the magazine's offices knew of the decision well before the Washington, D.C.-based Mr. Schmidt.

23. During the 1997-2000 period, Mr. Schmidt continued to use staff meetings and certain other occasions as a forum in which to press for changes in the operation of the magazine. Subsequently, management placed a gag order on Mr. Schmidt, denying him the right to speak out on any issue, and then took another disagreeable step toward silencing everyone by banning all private conversations among employees anywhere in the workplace during working hours (under pressure from other employees, at least the gag order was later lifted).


24. By 2000, it became apparent to me, as it must have to others, that management looked upon Mr. Schmidt as a workplace activist who needed to be at least suppressed, if not removed. It also seemed to me that management found it most advantageous to keep Mr. Schmidt working offsite, where he would have less contact with other employees, but where he would have to keep working hard to meet his increased article editing quotas.

25. In my almost five years at *Physics Today*, I saw most of my Maryland colleagues and, when they were present, some of my out-of-state ones — as well as the managers — make personal use of their working environment and working hours. Doing so seemed to be an accepted part of the AIP culture. I thought that Mr. Schmidt was a conspicuous and eccentric exception in not taking advantage of that permissive attitude.

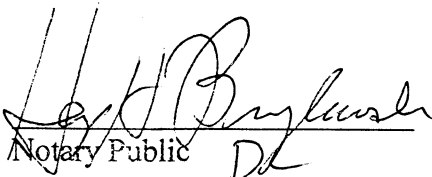
26. About a month after I resigned from *Physics Today*, I learned for the first time of Mr. Schmidt's about-to-be-published book. I was most surprised to learn of its existence, and just assumed that he had devoted most of his spare time — including the six months without pay he had taken off from *Physics Today* — to the book's preparation. A few weeks after that, I laughed at his joke — echoing Abbie Hoffman's playful book title — about having stolen time to write the book. And shortly after that, I heard that AIP had fired him for time theft. The accusation sounded like a make-to-order excuse for AIP to get rid of a 19-year AIP employee who met all of his work obligations but had the temerity to speak out about workplace issues and to use his free time to write a book of his own.

27. In retrospect, Mr. Schmidt may have made a major mistake in agreeing with AIP to work in Washington, D.C. However, there's really no question that working in that fashion is exactly what he did from 1997 to 2000, just as other *Physics Today* editors worked in California, New York, and North Carolina.

28. If I were asked to testify in this case, it would be much more convenient for me (as an Alexandria, Virginia, resident) to travel to the courthouse near the Judiciary Square Metro station in Washington, D.C., than to the courthouse in Greenbelt, Maryland.


PAUL ELLIOTT

Sworn to before me this
31st day of March 2004.


Notary Public

INDEX OF EXHIBITS

Exhibit A: AIP-generated weekly work-location schedules showing where each *Physics Today* staff member worked each day. (38 schedules and an index)

Exhibit B: Plaintiff's e-mail messages and notes responding to AIP's weekly request for staff members to state their schedules for the following week. (33 responses)

Exhibit C: Two cited pages and the first page from the February 5, 2004, sworn statement of AIP manager Stephen G. Benka.

Exhibit D: Shipping label used by AIP to send Plaintiff a five-pound package of editorial material, for the May 1998 50th anniversary issue of *Physics Today* magazine, to work on in his District of Columbia home office. Also shown is a Post-It note arranging for the shipment of more such material.

Exhibit E: AIP-prepared overnight courier label used to send Plaintiff material to work on in his District of Columbia home office.

Exhibit F: Transmission report for a fax from Plaintiff in the District of Columbia to AIP consultant Liz Fitzgerald, who was working on the May 1998 issue of *Physics Today* magazine.

Exhibit G: E-mail exchange between Plaintiff and his supervisor, Stephen G. Benka — "Subject: Whereabouts."

Exhibit H: Letter from D. Allan Bromley, a nuclear physicist who became a presidential science advisor, praising Plaintiff's extensive work on his manuscript.

Exhibit I: Plaintiff's work product bearing handwritten notes of praise from his supervisor, Stephen G. Benka.

Exhibit J: Five e-mail messages sent by management to out-of-state employees only.

Exhibit K: March 1998 *Physics Today* table-of-contents page, as faxed to Plaintiff in the District of Columbia at 11:10 AM on February 12, 1998.

Exhibit L: E-mail messages arranging for Plaintiff to participate in *Physics Today* staff meetings by speakerphone from his District of Columbia home office.

Exhibit M: AIP reimbursement check stub and the receipts that Plaintiff submitted for photocopying and faxing.

Index of AIP documents

Document number	Date of document	Beginning date of work week covered	Number of days Plaintiff worked in District of Columbia home office (and number of working days in the week)
01	04 August 1997	04 August 1997	5 of 5
02	11 August 1997	11 August 1997	5 of 5
03	19 August 1997	18 August 1997	5 of 5
04	22 August 1997	25 August 1997	5 of 5
05	02 September 1997	01 September 1997	3 of 4
06	05 September 1997	08 September 1997	5 of 5
07	15 September 1997	15 September 1997	5 of 5
08	19 September 1997	22 September 1997	5 of 5
09	29 September 1997	29 September 1997	5 of 5
10	06 October 1997	06 October 1997	5 of 5
11	13 October 1997	13 October 1997	3 of 5
12	17 October 1997	20 October 1997	5 of 5
13	27 October 1997	27 October 1997	5 of 5
14	03 November 1997	03 November 1997	3 of 5
15	10 November 1997	10 November 1997	3 of 5
16	17 November 1997	17 November 1997	3 of 5
17	24 November 1997	24 November 1997	2 of 3
18	01 December 1997	01 December 1997	Vacation
19	08 December 1997	08 December 1997	Vacation
20	16 December 1997	15 December 1997	Vacation
21	24 December 1997	29 December 1997	3 of 3
22	08 January 1998	05 January 1998	4 of 5
23	12 January 1998	12 January 1998	2 of 5
24	20 January 1998	19 January 1998	3 of 4
25	27 January 1998	26 January 1998	4 of 5
26	09 February 1998	09 February 1998	3 of 5
27	17 February 1998	16 February 1998	2 of 4
28	20 February 1998	23 February 1998	4 of 5
29	03 March 1998	02 March 1998	4 of 5
30	18 May 1998	18 May 1998	Vacation
31	18 May 1998	25 May 1998	2 of 4
32	01 June 1998	01 June 1998	3 of 5
33	01 June 1998	08 June 1998	3 of 5
34	27 July 1998	03 August 1998	4 of 5
35	31 August 1998	31 August 1998	4 of 5
36	04 September 1998	07 September 1998	4 of 4
37	12 October 1998	12 October 1998	4 of 5
38	23 November 1998	30 November 1998	4 of 5

Total: 129 of 161 working days (80.1 percent)

Exhibit A

Physics Today

WEEK of August 4 - August 8

Data current as of August 4, 1997

EMPLOYEE	Mon 4	Tues 5	Wed 6	Thurs 7	Fri 8
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	V
Graham Collins	cp/ MD	cp/ MD	cp/ MD	cp/ MD	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	wa	wa	wa	wa	wa
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	cp	h/cp	cp	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	V
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	H	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	cp/ MD	cp/ MD	cp/ MD	cp/ MD	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of August 11 - August 15

Data current as of August 11, 1997

EMPLOYEE	Mon 11	Tues 12	Wed 13	Thurs 14	Fri 15
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	wa	wa	wa	wa	wa
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	V	V	V	V	V
Abby Klar	cp	h/cp	cp	cp	cp
Warren Kornberg	cp	cp	cp	cp	h
Jean Kumagai	CP	CP	CP	CP	V
Barbara Levi	V	V	V	V	ca
Gloria Lubkin	cp/ V	V	V	cp	cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	V	V
Elliott Plotkin	cp	cp	cp	cp	V
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of August 18 - August 22

Data current as of August 19, 1997

EMPLOYEE	Mon 18	Tues 19	Wed 20	Thurs 21	Fri 22
Judy Barker	cp	cp	cp	cp	V
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	wa	wa	wa	wa	wa
Susan Funk	SWP	cp	cp	cp	cp
Irwin Goodwin	V	V	V	w	V
Charles Harris	V	V	V	V	V
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	h	cp	cp	h
Jean Kumagai	V	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	V /cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	V
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	V	V	V
cp=College Park w=Washington h=Working @ Home ny=New York ca=California (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 25 August - 29 August

Data current as of 22 August 1997

EMPLOYEE	Mon 25	Tues 26	Wed 27	Thurs 28	Fri 29
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp/ OWP	OWP
Graham Collins	cp	cp	cp	V	V
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	wa	wa	wa	wa	wa
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	V	V	V	V	V
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	cp	h/cp	cp	cp	h/cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	CTT	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 2 September - 5 September

Data current as of 2 September 1997

EMPLOYEE	Mon 1	Tues 2	Wed 3	Thurs 4	Fri 5
Judy Barker	cp	H	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	V	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	wa	wa	wa	wa	wa
Susan Funk	cp	cp	PD	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	NJ	cp	cp
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	NJ	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	cp	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 8 September - 12 September

Data current as of 5 September 1997

EMPLOYEE	Mon 8	Tues 9	Wed 10	Thurs 11	Fri 12
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	wa	wa	wa	wa	wa
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	cp	h/cp	cp	cp	cp
Warren Kornberg	h	h	h	cp	h
Jean Kumagai	CP	CP	CP	CP	CP
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	V
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 15 September - 19 September

Data current as of 15 September 1997

EMPLOYEE	Mon 15	Tues 16	Wed 17	Thurs 18	Fri 19
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	V
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	CTT
Toni Feder	wa	wa	wa	wa	wa
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	NC	AGU	MD	NY	DC
Abby Klar	cp	h/cp	OWP	cp	h/cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	V
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	OWP	cp	cp
Elliott Plotkin	cp	cp	cp	cp	V
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	V	V	V	V	V
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 22 September - 26 September

Data current as of 19 September 1997

EMPLOYEE	Mon 22	Tues 23	Wed 24	Thurs 25	Fri 26
Judy Barker	cp	cp	cp	DC	cp
Steve Benka	cp	cp	cp	DC	cp
Graham Collins	cp	cp	cp	DC	cp
Charles Day	cp	cp	cp	DC	cp
Paul Elliott	CTT	CTT	cp	DC	cp
Toni Feder	DC/cp	cp	cp	DC	cp
Susan Funk	cp	cp	cp	DC	cp
Irwin Goodwin	w	w	w	DC	w
Charles Harris	cp	cp	cp	DC	cp
Abby Klar	cp	h/cp	cp	cp	h/cp
Warren Kornberg	h	cp	cp	DC	h
Jean Kumagai	ny	DC/CP	CP	DC	ny
Barbara Levi	CP	CP	CP	DC	CP
Gloria Lubkin	h/cp	cp	cp	DC	cp
Carol Lucas	cp	cp	cp	DC	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	V	cp	cp	DC	cp
Jeff Schmidt	h	h	h	DC	h
Bert Schwarzschild	cp	cp	cp	DC	cp
Rita Wehrenberg	cp	cp	cp	DC	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 29 September - 3 October

Data current as of 29 September 1997

EMPLOYEE	Mon 29	Tues 30	Wed 1	Thurs 2	Fri 3
Judy Barker	cp/h	cp	cp	cp	cp
Steve Benka	OWP	OWP	cp	cp	PD
Graham Collins	V	cp	cp	cp	V
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	cp	cp
Toni Feder	cp	h	cp	cp	h
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	cp	h/cp	cp	cp	h/cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	PD	ny	ny	ny	ny
Barbara Levi	V/ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	h	V	V
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	V	V
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	cp	cp	cp	V	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 6 October - 10 October

Data current as of 6 October 1997

EMPLOYEE	Mon 6	Tues 7	Wed 8	Thurs 9	Fri 10
Judy Barker	V	h	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	h	cp	cp	h
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	M	M	M	M	M
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 13 October - 17 October

Data current as of 13 October 1997

EMPLOYEE	Mon 13	Tues 14	Wed 15	Thurs 16	Fri 17
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	PD	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	PA	PA	cp	cp	V
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	h	h	cp	cp	cp
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	M	M	M	M	M
Warren Kornberg	V	V	V	V	V
Jean Kumagai	ny	ny	CP	CP	CP
Barbara Levi	ca	ca	ca	CP	CP
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	V	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	h	cp	h	cp
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp

cp=College Park w=Washington h=Working @ Home ny=New York ca=California
 m=maternity leave
 (Capitalized and bold indicates change from regular schedule)

Physics Today

WEEK of 20 October - 24 October

Data current as of 17 October 1997

EMPLOYEE	Mon 20	Tues 21	Wed 22	Thurs 23	Fri 24
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	NM	NM	NM	NM	NM
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	VT	cp	cp	cp	cp
Abby Klar	M	M	M	M	M
Warren Kornberg	V	V	cp	cp	h
Jean Kumagai	ny	ny	CTT	CTT	V
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	V /cp	cp	cp	cp	cp
Carol Lucas	V	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	V	cp
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	V
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 27 October - 31 October

Data current as of 27 October 1997

EMPLOYEE	Mon 27	Tues 28	Wed 29	Thurs 30	Fri 31
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	V	cp	cp	cp	V
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	TX	TX	cp	cp	cp
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	NC	cp	cp	cp	cp
Abby Klar	M	M	M	M	M
Warren Kornberg	h	h	cp	cp	h
Jean Kumagai	V	V	V	V	V
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	TX	TX	cp	cp	cp/ V
Carol Lucas	cp	h	cp	cp	V
Ken McNaughton	TX	TX	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	h	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 3 November - 7 November

Data current as of 3 November 1997

EMPLOYEE	Mon 3	Tues 4	Wed 5	Thurs 6	Fri 7
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	CTT	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	cp	cp	cp	cp
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	NC	cp	cp	cp	cp
Abby Klar	M	M	M	M	M
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	PD	ca	ca
Gloria Lubkin	cp	cp	cp	cp	h/V
Carol Lucas	cp	h	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	cp	h	cp	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp

cp=College Park w=Washington h=Working @ Home ny=New York ca=California
 m=maternity leave
 (Capitalized and bold indicates change from regular schedule)

Physics Today

WEEK of 10 November - 14 November

Data current as of 10 November 1997

EMPLOYEE	Mon 10	Tues 11	Wed 12	Thurs 13	Fri 14
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	V	cp	cp
Graham Collins	cp	cp	cp	cp	V
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	h	cp	cp	cp
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	CP	w	CP	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	M	M	M	M	M
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	CP	CP	CP	ny	ny
Barbara Levi	ca	ca	ca	ca	PD
Gloria Lubkin	cp	cp	cp	cp	DC /cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	V
Jeff Schmidt	h	cp	cp	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 17 November - 21 November

Data current as of 17 November 1997

EMPLOYEE	Mon 17	Tues 18	Wed 19	Thurs 20	Fri 21
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	V
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	cp	cp	cp/owp	CTT
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	H	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	M	M	M	M	M
Warren Kornberg	h	h	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	PD	ca	ca	ca	ca
Gloria Lubkin	cp	cp	V	V	V
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	V	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	V
Jeff Schmidt	h	cp	cp	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 24 November - 28 November

Data current as of 24 November 1997

EMPLOYEE	Mon 24	Tues 25	Wed 26	Thurs 27	Fri 28
Judy Barker	SWP	cp	cp		
Steve Benka	cp	cp	OWP		
Graham Collins	cp	cp	cp		
Charles Day	cp	cp	cp		
Paul Elliott	cp	cp	cp		
Toni Feder	cp	cp	cp		
Susan Funk	cp	cp	cp		
Irwin Goodwin	w	w	w		
Charles Harris	cp	cp	cp		
Abby Klar	M	M	M		
Warren Kornberg	cp	cp	h		
Jean Kumagai	ny	ny	ny		
Barbara Levi	V	V	V		
Gloria Lubkin	CA	CA	cp		
Carol Lucas	cp	cp	cp		
Ken McNaughton	cp	cp	cp		
Elliott Plotkin	cp	cp	cp		
Jeff Schmidt	h	h	cp		
Bert Schwarzschild	cp	cp	cp		
Rita Wehrenberg	cp/ V	cp	cp		
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 1 December - 5 December

Data current as of 1 December 1997

EMPLOYEE	Mon 1	Tues 2	Wed 3	Thurs 4	Fri 5
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	OWP	OWP	OWP
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	cp	cp	cp	cp
Susan Funk	cp	h	cp	cp	cp
Irwin Goodwin	CTT	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	M	M	M	M	M
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	V	ca	ca
Gloria Lubkin	V/h	cp	cp	PA	PA/cp
Carol Lucas	cp	cp	cp	cp	V
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	V	cp	cp
Jeff Schmidt	LA/V	LA/V	LA/V	LA/V	LA/V
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 8 December - 12 December

Data current as of 8 December 1997

EMPLOYEE	Mon 8	Tues 9	Wed 10	Thurs 11	Fri 12
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp/ DC /cp	cp/ DC	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	cp	cp	PD	CTT
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	NC
Abby Klar	M	M	M	M	M
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	V
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	LA/V	LA/V	LA/V	LA/V	LA/V
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	V

cp=College Park w=Washington h=Working @ Home ny=New York ca=California
m=maternity leave
(Capitalized and bold indicates change from regular schedule)

Physics Today

WEEK of 15 December - 19 December

Data current as of 16 December 1997

EMPLOYEE	Mon 15	Tues 16	Wed 17	Thurs 18	Fri 19
Judy Barker	cp	cp	cp	V	V
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	V	V
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	cp	cp	cp	cp
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	M	M	M	M	M
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	V
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	V
Jeff Schmidt	V	V	V	V	V
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 29 December - 31 December

Data current as of 24 December 1997

EMPLOYEE	Mon 29	Tues 30	Wed 31	Thurs 1	Fri 2
Judy Barker	V	V	V		
Steve Benka	cp	cp	cp		
Graham Collins	cp	cp	V		
Charles Day	cp	cp	cp		
Paul Elliott	cp	cp	cp		
Toni Feder	NC	NC /cp	cp		
Susan Funk	V	cp	cp		
Irwin Goodwin	w	w	w		
Charles Harris	cp	cp	cp		
Abby Klar	M	M	M		
Warren Kornberg	h	cp	cp		
Jean Kumagai	ny	ny	ny		
Barbara Levi	V	ca	ca		
Gloria Lubkin	V /cp	cp	cp		
Carol Lucas	cp	cp	cp		
Ken McNaughton	cp	cp	cp		
Elliott Plotkin	V	cp	cp		
Jeff Schmidt	<i>h</i> cp	h	h		
Bert Schwarzschild	cp	cp	cp		
Rita Wehrenberg	V	V	V		
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 5 JANUARY - 9 January 1998

Data current as of 8 January 1998

EMPLOYEE	Mon 5	Tues 6	Wed 7	Thurs 8	Fri 9
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	cp	cp
Toni Feder	cp	cp	cp	cp	cp
Susan Funk	swp	swp	swp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	NC
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	UCSB	ca	UCSB	ca	UCSB
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	V	cp	cp	cp	cp
Jeff Schmidt	cp	h	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 12 JANUARY - 16 January 1998

Data current as of 12 January 1998

EMPLOYEE	Mon 12	Tues 13	Wed 14	Thurs 15	Fri 16
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp/ V
Graham Collins	cp	cp	cp	cp	PD
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	cp	cp	cp	cp
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	CP	CP	CP	ny	ny
Barbara Levi	UCSB	ca	UCSB	ca	UCSB
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	NY	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	cp	cp	h	cp
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp

cp=College Park w=Washington h=Working @ Home ny=New York ca=California
m=maternity leave
(Capitalized and bold indicates change from regular schedule)

Physics Today

WEEK of 19 JANUARY - 23 January 1998

Data current as of 20 January 1998

EMPLOYEE	Mon 19	Tues 20	Wed 21	Thurs 22	Fri 23
Judy Barker		cp	cp	cp	cp
Steve Benka		cp	cp	cp	cp
Graham Collins		PD	V	V	V
Charles Day		cp	cp	cp	cp
Paul Elliott		cp	cp	h	cp
Toni Feder	CTE	cp	cp	cp	cp
Susan Funk		cp	cp	cp	cp
Irwin Goodwin		w	w	w	w
Charles Harris		NY	NY	cp	NC
Abby Klar		cp	cp	cp	cp
Warren Kornberg		h	cp	cp	h
Jean Kumagai		ny	ny	ny	ny
Barbara Levi		ca	UCSB	ca	UCSB
Gloria Lubkin		cp	cp	cp	cp
Carol Lucas		cp	cp	cp	cp
Ken McNaughton		cp	cp	cp	cp
Elliott Plotkin		cp	cp	cp	cp
Jeff Schmidt		h	h	cp	h
Bert Schwarzschild		cp	cp	cp	cp
Rita Wehrenberg		cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 26 JANUARY - 30 January 1998

Data current as of 27 January 1998

EMPLOYEE	Mon 26	Tues 27	Wed 28	Thurs 29	Fri 30
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	V	V	V	V	V
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	cp	cp	cp	cp
Susan Funk	cp/h	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	OWP	ny	ny	ny	ny
Barbara Levi	UCSB	ca	UCSB	ca	UCSB
Gloria Lubkin	cp	cp	cp	cp	V
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	h	cp	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 9 February - 13 February 1998

Data current as of 9 February 1998

EMPLOYEE	Mon 9	Tues 10	Wed 11	Thurs 12	Fri 13
Judy Barker	cp	cp	cp	cp	CTT
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	V	cp	cp	cp	cp
Charles Day	cp	cp	cp	NJ	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	cp	cp	NJ	PA
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	cp	cp	cp/ OWP	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	CP	CP	CP	CP	PA
Barbara Levi	UCSB	ca	UCSB	ca	UCSB
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	cp	cp	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of 16 February - 20 February 1998

Data current as of 17 February 1998

EMPLOYEE	Mon 16	Tues 17	Wed 18	Thurs 19	Fri 20
Judy Barker		cp	cp	cp	cp
Steve Benka		cp	cp	cp	V
Graham Collins		cp	cp	cp	cp
Charles Day*		cp	cp	cp	cp
Paul Elliott		cp	cp	h	cp
Toni Feder		NC	NC	NC	NC
Susan Funk		cp	cp	cp	cp
Irwin Goodwin		w	MD	MD	w
Charles Harris		cp	cp	NC	NC
Abby Klar		cp	cp	cp	cp
Warren Kornberg		cp	cp	cp/h	h
Jean Kumagai		PA	PA	PA	PA
Barbara Levi		ca	UCSB	ca	UCSB
Gloria Lubkin		cp	cp	cp	cp
Carol Lucas		cp	cp	cp	cp
Ken McNaughton		V	V	V	V
Elliott Plotkin		cp	cp	cp	cp
Jeff Schmidt		cp	cp	h	h
Bert Schwarzschild		cp	cp	cp	cp
Rita Wehrenberg		cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

Week of 23 February - 27 February 1998

Data current as of 20 Feb 1998, 3:49 PM

EMPLOYEE	Mon 23	Tues 24	Wed 25	Thurs 26	Fri 27
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	V	cp	PD	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	NC	NC	NC	NC	cp
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	NC
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	h	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	UCSB	ca	UCSB	ca	UCSB
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	V	V	V	V	V
Elliott Plotkin	V	cp	cp	cp	cp
Jeff Schmidt	h	h	h	cp	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK of March 2 - March 6, 1998

Data current as of March 3, 1998

EMPLOYEE	Mon 2	Tues 3	Wed 4	Thurs 5	Fri 6
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Graham Collins	cp	cp	cp	cp	cp
Charles Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	cp	cp	cp	cp	CTT
Susan Funk	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	NC
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	UCSB	ca	UCSB	ca	UCSB
Gloria Lubkin	cp	cp	cp	cp	cp
Carol Lucas	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h	h	h	cp	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington h=Working @ Home ny=New York ca=California m=maternity leave (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK OF MAY 18 - MAY 22, 1998

Data current as of May 18, 1998

EMPLOYEE	Mon 18	Tues 19	Wed 20	Thurs 21	Fri 22
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	v	cp	cp	w	cp
Chas Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	cp	cp
Toni Feder	NC	NC	NC	NC	NC
Tonya Gary	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	v	cp	cp	cp	NC
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	h	cp	cp	cp/h
Jean Kumagai	v	v	v	v	v
Barbara Levi	UCSB	ca	UCSB	ca	UCSB
Gloria Lubkin	v	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	v	cp	cp	cp
Jeff Schmidt	v	v	V	V	V
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	v	v	v	cp	cp
<p> cp=College Park w=Washington ny=New York h=working@home UCSB=Univ of CA, Santa Barbara NC=North Carolina (Capitalized and bold indicates change from regular schedule) </p>					

Physics Today

WEEK OF MAY 26 - MAY 29, 1998

Data current as of May 18, 1998

EMPLOYEE	Mon 25	Tues 26	Wed 27	Thurs 28	Fri 29
Judy Barker		s	cp	cp	cp
Steve Benka		T	T	T	T
Chas Day		cp	cp	cp	cp
Paul Elliott		cp	cp	h	cp
Toni Feder		NC	NC	NC	NC
Tonya Gary		cp	cp	cp	cp
Irwin Goodwin		w	w	w	w
Charles Harris		cp	cp	ny	ny
Abby Klar		cp	cp	cp	cp
Warren Kornberg		h	cp	cp	cp/h
Jean Kumagai		v	v	v	v
Barbara Levi		ca	UCSB	ca	UCSB
Gloria Lubkin		cp	cp	cp	cp
Ken McNaughton		v	v	v	v
Elliott Plotkin		cp	cp	cp	cp
Jeff Schmidt		cp h	h CP	cp h	h
Bert Schwarzschild		cp	cp	cp	cp
Rita Wehrenberg		cp	cp	cp	cp
<p> cp=College Park w=Washington ny=New York h=working@home C=Cpcomp Comp Day UCSB=Univ of CA, Santa Barbara NC=North Carolina S=Sick T=Travel (Capitalized and bold indicates change from regular schedule) </p>					

Physics Today

WEEK OF JUNE 1 - JUNE 5, 1998

Data current as of June 1, 1998

EMPLOYEE	Mon 1	Tues 2	Wed 3	Thurs 4	Fri 5
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Chas Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	NC	NC	NC	NC	NC
Tonya Gary	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	ny	ny
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	cp	h	cp	cp	cp/h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	UCSB	ca	UCSB	ca	UCSB
Gloria Lubkin	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	h cp	cp	h	cp h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington ny=New York h=working@home C=Comp Time UCSB=Univ of CA, Santa Barbara NC=North Carolina S=Sick T=Travel (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK OF JUNE 8 - JUNE 12, 1998

1998

Data current as of June 1,

EMPLOYEE	Mon 8	Tues 9	Wed 10	Thurs 11	Fri 12
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	OUT	cp	cp
Chas Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	NC	NC	cp	cp	cp
Tonya Gary	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	ny	cp	cp	cp	cp
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	cp	h	cp	cp	cp/h
Jean Kumagai	ny	CP	CP	CP	CP
Barbara Levi	ca	CP	CP	CP	CP
Gloria Lubkin	cp	cp	cp	cp	cp
Ken McNaughton	cp	OUT	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Jeff Schmidt	cp	h	h	h	cp
Bert Schwarzschild	cp	cp	cp	cp	V
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington ny=New York h=working@home C=Comp Time UCSB=Univ of CA, Santa Barbara NC=North Carolina S=Sick T=Travel (Capitalized and bold indicates change from regular schedule)					

Jeff

Physics Today

WEEK OF AUGUST 3 - 7, 1998

Data current as of July 27, 1998

EMPLOYEE	Mon 3	Tues 4	Wed 5	Thurs 6	Fri 7
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	cp	cp	cp	cp	cp
Chas Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	CT	cp
Toni Feder	nc	nc	nc	V	V
Tonya Gary	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	V	V	V	V	V
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	V	V	V	V	V
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	V	V	V	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Sharon Quarles	cp	cp	cp	cp	cp
Jeff Schmidt	h	cp	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington ny=New York h=working@home C=Comp Time NC=North Carolina S=Sick T=Travel (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK OF AUGUST 31 - SEPTEMBER 4, 1998

Data current as of August 31, 1998

EMPLOYEE	Mon 31	Tues 1	Wed 2	Thurs 3	Fri 4
Judy Barker	cp	h	cp	cp	h
Steve Benka	Jury duty	cp	cp	cp	cp
Chas Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	cp	cp
Toni Feder	France	France	France	France	France
Tonya Gary	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	cp
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliott Plotkin	cp	cp	cp	cp	cp
Sharon Quarles	cp	cp	cp	cp	cp
Jeff Schmidt	h	cp	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington ny=New York h=working@home C=Comp Time NC=North Carolina T=Travel (Capitalized and bold indicates change from regular schedule)					

Physics Today

WEEK OF SEPTEMBER 8 - SEPTEMBER 11, 1998

Data current as of September 4, 1998

EMPLOYEE	Mon 7	Tues 8	Wed 9	Thurs 10	Fri 11
Judy Barker		cp	cp	cp	cp
Steve Benka		cp	cp	cp	cp
Chas Day		cp	cp	v	v
Paul Elliott		cp	cp	h	cp
Toni Feder		France	nc	nc	nc
Richardh Firtzgerald		cp	cp	cp	cp
Tonya Gary		cp	cp	cp	cp
Irwin Goodwin		w	w	w	w
Charles Harris		nc	cp	cp	cp
Abby Klar		cp	cp	cp	cp
Warren Kornberg		cp	cp	cp	h
Jean Kumagai		ny	cp	cp	cp
Barbara Levi		ca	ca	ca	ca
Gloria Lubkin		cp	cp	cp	cp
Ken McNaughton		cp	cp	cp	cp
Elliot Plotkin		cp	cp	cp	cp
Sharon Quarles		cp	cp	cp	cp
Jeff Schmidt		h	h	h	h
Bert Schwarzschild		cp	cp	cp	cp
Rita Wehrenberg		cp	cp	cp	cp
cp=College Park w=Washington ny=New York h=working@home C=Comp Time NC=North Carolina T=Travel (Capitalized and bold indicates change from regular schedule)					

WEEK OF OCTOBER 13 - OCTOBER 16, 1998
Data current as of October 12, 1998

EMPLOYEE	Mon 12	Tues 13	Wed 14	Thurs 15	Fri 16
Judy Barker	cp	cp	cp	cp	h
Steve Benka	cp	cp	cp	cp	cp
Chas Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	cp	cp
Toni Feder	nc	nc	nc	nc	nc
Rich Fitzgerald	cp	cp	cp	cp	cp
Tonya Gary	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp-1/2	T	T	T	T
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	V	V	V	V	V
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	h-1/2
Ken McNaughton	cp	cp	cp	cp	cp
Elliot Plotkin	cp	cp	cp	cp	V
Sharon Quarles	cp	cp	cp	cp	cp
Jeff Schmidt	cp	h	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Rita Wehrenberg	V-1/2	cp	cp	cp	cp
cp=College Park w=Washington ny=New York h=working@home C=Comp Time NC=North Carolina T=Travel (Capitalized and bold indicates change from regular schedule)					

*****OSA Meeting October 4-9, Baltimore Convention Center*****

Physics Today

WEEK OF NOVEMBER 30 - DECEMBER 4, 1998

Data current as of November 23, 1998

EMPLOYEE	Mon 30	Tues 1	Wed 2	Thurs 3	Fri 4
Judy Barker	cp	cp	cp	cp	cp
Steve Benka	V	cp	cp	cp	cp
Chas Day	cp	cp	cp	cp	cp
Paul Elliott	cp	cp	cp	h	cp
Toni Feder	NM	NM	NM	NM	NM
Rich Fitzgerald	cp	cp	cp	cp	cp
Tonya Gary	cp	cp	cp	cp	cp
Irwin Goodwin	w	w	w	w	w
Charles Harris	cp	cp	cp	cp	nc
Abby Klar	cp	cp	cp	cp	cp
Warren Kornberg	h	cp	cp	cp	h
Jean Kumagai	ny	ny	ny	ny	ny
Barbara Levi	ca	ca	ca	ca	ca
Gloria Lubkin	cp	cp	cp	cp	cp
Ken McNaughton	cp	cp	cp	cp	cp
Elliot Plotkin	cp	cp	cp	cp	cp
Sharon Quarles	cp	cp	cp	cp	cp
Jeff Schmidt	h	cp	h	h	h
Bert Schwarzschild	cp	cp	cp	cp	cp
Marian Smith	cp	cp	cp	cp	cp
Rita Wehrenberg	cp	cp	cp	cp	cp
cp=College Park w=Washington ny=New York h=working@home C=Comp Time V=Vacation NC=North Carolina T=Travel (Capitalized and bold indicates change from regular schedule)					

HAPPY THANKSGIVING

From: Jeff Schmidt
To: SFUNK
Date: 14 Nov 1997 (Fri) 14:02
Subject: Whereabouts next week, 17-21 November -Reply

Hi Susan --

My current plan is to work in the office on Wednesday 19 November.

Jeff

cc: jschmidt

Exhibit B

From: Jerry Schmidt <ar429@lafn.ORG>
To: AIP_NY.AIPGate("sfunk@aip.acp.org")
Date: 20 Dec 1997 (Sat) 2:56
Subject: Whereabouts

Hi Susan --

I plan to work in the office on Monday 22 December.

Jeff

CC: AIP_NY.AIPGate("jds@aip.org")

From: Jeff Schmidt
To: SFUNK
Date: 29 Jan 1998 (Thu) 22:21
Subject: Your whereabouts for next week -Reply

Hi Susan --

My current plan is to work in the office on Wednesday 4 February.

Jeff

CC: jschmidt

From: Jeff Schmidt
To: SFUNK
Date: 18 Feb 1998 (Wed) 9:30
Subject: Whereabouts

Hi Susan --

I will be working at home today rather than in the office as I had originally planned. (I may be getting a cold.) I'd like to participate in the articles meeting at 2:00 pm by telephone.

Jeff

CC: RWEHRENB, PELLIOT, EPLOTKIN, CLUCAS, JSCHMIDT

From: Jeff Schmidt
To: sfunk
Date: 8 Mar 1998 (Sun) 6:53
Subject: Whereabouts

Hi Susan --

I plan to work in the office on Tuesday 10 March.

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: 7 May 1998 (Thu) 15:22
Subject: Next Week's Schedule -Reply

Hi Tonya --

Here is my plan for the next three weeks:

May

11 -- VAC
12 -- VAC
13 -- VAC
14 -- VAC
15 -- VAC

18 -- VAC
19 -- VAC
20 -- VAC
21 -- VAC
22 -- VAC

25 --
26 -- h
27 -- cp
28 -- h
29 -- h

If you or anyone else needs to contact me while I am on vacation, I can be called at home; afternoons and evenings are best. If it is not urgent, then the best way to contact me is by e-mail or voice mail (dial 3367 . . . 3048).

-- Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: 12 Jun 1998 (Fri) 15:31
Subject: WHEREABOUTS - June 15-19, 1998 -Reply

Hi Tonya --

Please put me down for working in the office on Thursday 18 June 98, and for working at home the other days.

Thanks,
Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: 19 Jun 1998 (Fri) 15:46
Subject: Whereabouts

Hi Tonya --

My plan for next week 22-26 June 1998 is to work in the office on Monday 22 June and to work at home the rest of the week.

-- Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: 25 Jun 1998 (Thu) 19:31
Subject: WHEREABOUTS SCHEDULE - June 29 - July 3, 1998 -Reply

Hi Tonya --

Please mark me down for working in the office on Tuesday 30 June and for working at home the other four days. Thanks,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: 10 Jul 1998 (Fri) 10:30
Subject: WHEREABOUTS July 13-17, 1998 -Reply

Hi Tonya --

Please list me as working at home every day next week (13-17 July). I may come in to the office next week, but I am not yet sure when. Thanks,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: 14 Aug 1998 (Fri) 16:56
Subject: WHEREABOUTS SCHEDULE -- August 17-21, 1998 -Reply

Hi Tonya --

I plan to work in the office on Monday 17 August and at home the other days. See you Monday,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: 11 Sep 1998 (Fri) 13:54
Subject: Whereabouts Schedule, September 14-18 -Reply

Hi Tonya --

My plan is to work in the office on Tuesday 15 September and at home the other days.

Have a good weekend,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: 25 Sep 1998 (Fri) 16:37
Subject: Whereabouts Schedule -- September 28-October 2, 1998 -Reply

Hi Tonya --

Please mark me down for working in the office on Monday and Thursday (28 September and 1 October) and at home the other days. Thanks,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: Tonya Gary
Date: Fri, Jun 25, 1999 1:33 PM
Subject: Re: Whereabouts - June 28-July 2

Hi Tonya,

I plan to be in the office on Tuesday 29 June and to work at home the other days.

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Fri, Jul 16, 1999 8:38 PM
Subject: Whereabouts - July 19-23, 1999 -Reply

Hi Tonya,

My plan is to work at home all five days 19 - 23 July 1999.

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Fri, Jul 23, 1999 11:16 AM
Subject: Whereabouts, July 26-30, 1999 -Reply

Hi Tonya,

I plan to work in the office on Monday and Thursday 26 and 29 July 99 and to work at home the other days.

Jeff

PS -- I received the Leibler material. Thanks!

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Fri, Aug 27, 1999 4:01 PM
Subject: Whereabouts

Hi Tonya,

My plan for the week of 30 August is to work in the office on Monday 30 August and at home the other days.

Have a good weekend,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Fri, Sep 10, 1999 11:29 AM
Subject: Whereabouts - September 13-17, 1999 -Reply

Hi Tonya,

My plan is to work in the office on Wednesday 15 September and at home the other days. Have a nice weekend,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Mon, Sep 27, 1999 2:53 AM
Subject: Whereabouts

Hi Tonya,

My plan is to work in the office on Wednesday 29 September and at home the other days this week.

I would like to participate by telephone in the Tuesday 2 pm staff meeting. (In case anyone wonders, and please let me know if anyone does, I am planning to come in to the office on Wednesday rather than on the day of the staff meeting because that is the best timing for my work on the Bloomfield and Leibler articles.)

Jeff

CC: JSCHMIDT

From: Jeff Schmidt
To: TGARY
Date: Fri, Oct 29, 1999 4:56 PM
Subject: Whereabouts - November 1-5, 1999 -Reply

Hi Tonya,

Let's try this plan:

M -- h
Tu -- h
W -- cp
Th --
F -- h

(Please leave Thursday blank.)

Thanks,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Fri, Nov 5, 1999 2:07 PM
Subject: Whereabouts - November 8-12, 1999; Timesheets -Reply

Hi Tonya --

Here's my plan:

M -- h
Tu -- cp (and I will attend lunch for Jean)
W -- h
Th --
F -- h

(Thursday is blank.)

Have a good weekend,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Fri, Nov 12, 1999 10:33 PM
Subject: Whereabouts, November 15-19, 1999 -Reply

Hi Tonya --

Here's my plan:

M -- h
Tu -- cp (and I will attend the lunch)
W --
Th -- h
F -- h

(Wednesday is blank.)

Jeff

CC: jschmidt

TO YOUNG 3 JAN 00

PHYSICS TODAY

Jeff Schmidt

M	3	CP
Tu	4	h
W	5	h
Th	6	
F	7	h

From: Jeff Schmidt
To: TGARY
Date: Fri, Jan 7, 2000 11:35 AM
Subject: January 10-14, 2000 -Reply

Hi Tonya,

My plan for next week is the same as this week's:

M -- cp
Tu -- h
W -- h
Th --
F -- h

See you Monday; have a good weekend.

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Fri, Jan 14, 2000 12:20 PM
Subject: Whereabouts

Hi Tonya,

Here's my plan for next week:

Tu 18 -- h
W 19 -- h
Th 20 -- cp
F 21 --

Have a good holiday!

Jeff

CC: jschmidt

PHYSICS TODAY

Jeff Schmidt

24-28 Jan. 00

M	cp
Tu	h
W	
Th	h
F	h

From: Jeff Schmidt
To: TGARY
Date: Mon, Feb 7, 2000 12:50 AM
Subject: February 7-11, 2000 -Reply

Hi Tonya,

Here's my plan for this week:

M -- h
Tu -- h
W --
Th -- cp
F -- h

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Fri, Feb 11, 2000 12:52 PM
Subject: February 14-18, 2000 -Reply

Hi Tonya,

Here's my plan:

M -- cp
Tu --
W -- h
Th -- h
F -- h

Thursday and Friday I may be at the AAAS meeting, depending on the program.

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Mon, Feb 21, 2000 7:12 PM
Subject: Whereabouts

Hi Tonya,

Here's my plan for the week of 22 - 25 Feb. 00:

Tu -- h
W -- cp
Th --
F --h

Jeff

CC: JSCHMIDT

3 Mar. 00

PHYSICS TODAY

Jeff Schmidt

Tony

my plan for 6-10 Mar 00

M 6 — h

Tu 7 — h

W 8 — CP

Th 9 — h

F 10 —

Jeff

From: Jeff Schmidt
To: TGARY
Date: Fri, Mar 10, 2000 4:39 PM
Subject: Whereabouts and Timesheet -Reply

Hi Tonya,

My plan for 13 - 17 March 2000 is

M -- h
Tu -- h
W --cp
Th --
F -- h

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: Mon, Mar 27, 2000 12:11 AM
Subject: Whereabouts

Hi Tonya,

Here's my plan for 27 - 31 March 2000:

M -- h
Tu -- h
W -- cp
Th -- h_a
F --

See you soon,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: TGARY
Date: 4/24/00 7:09am
Subject: April 24-28, 2000 -Reply

Hi Tonya,

Here's my tentative plan:

M -- h
Tu -- h
W -- cp
Th --
F -- h

Jeff

CC: jschmidt

JACKSON LEWIS LLP
ATTORNEYS FOR DEFENDANT
8614 Westwood Center Drive, Suite 950
Vienna, Virginia 22182
(703) 821-2189

WENDY J. MELLK, ESQ. (*pro hac vice* admission to be made)
TERESA BURKE WRIGHT, ESQ. (DC Bar No. 429196)

Defendant.

STATE OF _____)
) ss.:
COUNTY OF _____)

1. I am not a party to the above-captioned action. I make the statements herein based upon my own personal knowledge, except such matters as are alleged on information and belief, and as to those matters, I believe them to be true.

2. I submit this Affidavit in support of Defendant American Institute of Physics' ("AIP's") Motion to Transfer Venue from the United States District Court, District of Columbia, to the United States District Court for the District of Maryland, Southern Division.

Exhibit C

including the decision to discharge him. All personnel records regarding Mr. Schmidt were, and remain, maintained in College Park.

9. I am aware that Mr. Schmidt performed work from his home in the District of Columbia. However, AIP never requested that Mr. Schmidt work from his home. Any time that Mr. Schmidt worked from home, he did so for personal reasons. AIP derived no benefit from the fact that Mr. Schmidt worked from home.

10. It is my understanding that Dr. Stith submitted an Affidavit in this matter stating that Mr. Schmidt only occasionally worked from home. I have no reason to believe that Dr. Stith was aware that Mr. Schmidt worked from home several days a week. I do not recall any specific discussion with Dr. Stith about the fact that Mr. Schmidt worked from home several days a week during some workweeks. I never requested that Dr. Stith authorize permission for Mr. Schmidt (or any other employee) to work from home.

11. It also is my understanding that Mr. Schmidt has submitted 38 work location schedules for selected work weeks in 1997 and 1998. Those schedules indicate that, during those weeks, he worked several days from his home. Although Mr. Schmidt may have performed work from his home in the District of Columbia, as reflected in the schedules, I never considered him to be employed in the District of Columbia. Rather, at all times during his employment with AIP, his actual place of employment was at AIP in College Park, Maryland.

12. I work out of AIP's College Park, Maryland offices. *Physics Today* is published in College Park, Maryland: editorial assignments are made in College Park; staff meetings are held in College Park; decisions regarding editorial content are

made in College Park; Mr. Nanna and his staff work in College Park; and the magazine's artwork is developed in College Park. Quite simply, all decisions regarding *Physics Today*, including decisions regarding the magazine's employees, are made in College Park.

13. Mr. Schmidt has submitted only self-serving work location schedules, presenting an incomplete and misleading picture. For example, Mr. Schmidt has not presented location schedules for most of March 1998 through May 1998. During this time, Mr. Schmidt (along with the other *Physics Today* staff members) was preparing *Physics Today's* 50th Anniversary Issue. During this time, Mr. Schmidt worked in College Park daily.¹

14. In addition, Mr. Schmidt took a six-month sabbatical from in or around December 1998 through May of 1999, during which he performed no work for AIP at all. Upon his return from sabbatical, Mr. Schmidt requested, and was granted, permission to become a part-time employee; accordingly, he did not work five days per week starting in June 1999.

15. Significantly, all discussions regarding Mr. Schmidt's requests to take a sabbatical, and to become a part-time employee, occurred in College Park, Maryland.

16. Mr. Schmidt's statement that he "participated in *Physics Today* staff meetings by telephone (speakerphone) from the District of Columbia" also is not entirely true (Schmidt Affidavit at ¶20). Mr. Schmidt was present, in College Park, for the majority of *Physics Today* staff meetings.

¹ *Physics Today* does not save the weekly location schedules.

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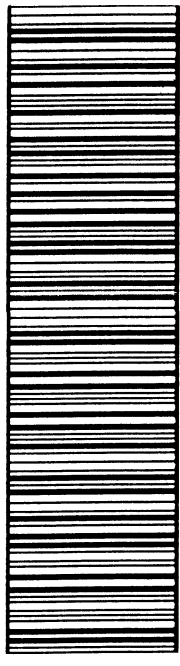
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LAST SUCCESSFUL PAGE 001

23

PHYSICS PHYSICISTS and SECURITY

By John B. Phelps and Ernest C. Pollard

FOR the last fifteen years, a great part of physical research in the United States and a high proportion of the working hours of US physicists have been related, in one way or another, to national security. During World War II the objectives of physicists and their research programs were more or less clearly defined. The overriding task then was to produce the better weapons and countermeasures which could, and did, speed the day of victory. The impressive wartime successes in applied research helped to establish physics and the other sciences as indispensable to progress in the "hardware" of war. In a broader sense, the military man, the statesman, the average citizen—and the scientist—all came, quite understandably, to associate scientific progress with greater security for our country. And in this broad association of science with security physics has probably occupied the most prominent position, whether this prominence be measured by respect, money, publicity, or security restrictions.

It is clear that physics still contributes to our security. But just how it contributes—or how it can and should contribute most effectively—has not been quite so clear for the last ten years. Many physicists have, of course, continued to work on weapons. In this area the objectives are still fairly well defined, although the sense of urgency and the team spirit which transcends administrative barriers and professional viewpoints do not always seem to be present.

Most physicists also feel strongly that progress in nonweapons research, in all the branches of pure and applied physics, also contributes fundamentally to our security. But this contribution is a hard thing to sum up in a few words. Security is a word sometimes overworked almost to the point of meaninglessness, and very

hard to define in the present context of world affairs. But essentially all US physicists will go along with the view that a Soviet-Communist-dominated world would be a very unattractive place for people, including scientists, to live and work, and that such a world one or two generations hence is to be avoided, even at great cost. Any insurance against such a world is, as far as we are concerned, a useful measure of security (and perhaps even a passably good operational definition of that word).

Our purpose here is not to discuss national security nor to tell how physics can best contribute to it; yet we do need to establish some perspective. Perhaps we should add also that we are not oblivious to the inherent and unique beauty of physics and the deep, personal satisfaction that physicists may derive from it. But we are, with some regret, excluding these things from this brief article, in order to focus on the practical involvement of physics in some realities of the present. Our aim is to call attention to a few recent developments which affect the relationship of physics and physicists to our national security and to pick out some trends which we believe are of interest to most physicists, and to US scientists in general. These developments have occurred both at home, and abroad, and there may be more to come. Now, a little more than a decade after the war, the prevailing concept of security through science is undergoing some perceptible, and hopefully significant, modifications. This seems to be a good time to try to sum up the essential issues and trends.

Soviet Advances

MOST of the security policies which have had so great an influence on physics and physicists originated in the years 1945 through 1947. Then, the wartime harmony with the Soviet Union was coming to a fairly abrupt end and the concept of the cold war was emerg-

John B. Phelps is Secretary of the Scientific Committee on Security and a staff member of the Department of Biophysics at Yale University. He is currently editing a book on science and security which will be published by the American Research Council in early 1957. Ernest C. Pollard is Chairman of the Scientific Committee on Security. He is Professor of Physics and Chairman of the Department of Biophysics at Yale.

DECEMBER 1956

Exhibit F

From: Stephen Benka
To: jschmidt
Date: 27 Mar 1998 (Fri) 18:05
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Jeff,

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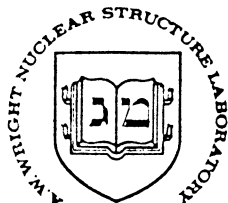
--Steve

>>> Jeff Schmidt 03/27/98 02:36am >>>

On Friday 27 March I will be working on a late schedule; people should feel free to call me at home until 11 pm (or leave me a voice mail message at x3048 any time). I will be working on the 8-pages of excerpts Friday and over the weekend, and I will bring in the result on Monday. Unlike Bert, I returned Liz Fitzgerald's phone call so that she can draft an intro to the decade; I will edit it.

Jeff

Exhibit G



Yale University

A. W. Wright Nuclear Structure Laboratory

272 Whitney Avenue, P.O. Box 6666, New Haven, Connecticut 06511

D. Allan Bromley
Henry Ford II Professor
and Director
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J. F. -*

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August 24, 1983

Dr. Harold Davis, Editor
PHYSICS TODAY
American Institute of Physics
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Dear Hal:

As you know, I maintain concern that nuclear physics gets adequate coverage in Physics Today. I write at this time to bring to your attention the possibility that two of my former colleagues, Robert J. Ascutto and Ernest J. Seglie, might be invited to prepare a paper on Grazing Collisions of Atomic Nuclei for publication in your journal. I have talked with them about this, and at my request, they have prepared a very general sort of talking outline which I enclose. It actually seems to me that this particular outline is much more appropriate for Scientific American than for Physics Today, but Bob and Ernie are the two guys who, perhaps more than anyone else, contributed to our understanding of these collisions and what they can tell us about the underlying dynamics and structure of nuclei. They can write a very elegant article for you. Since it turns out that both of them have won very significant awards for excellence in teaching and clarity in writing, and I think that you and your people would enjoy working with them.

Although both are excellent nuclear physicists, Bob Ascutto is presently completing his residency in pediatrics at the University of Connecticut Medical Center, and Ernie Seglie is a senior staff officer at the Institute for Defense Analysis in Washington. Together, they were members of the Physics Department here at Yale for a number of years. In Bob Ascutto's case, I made the mistake, as Chairman of the Department, of assigning him to teach medical physics to undergraduates. He became so intrigued by this that he decided to undertake a medical program at our medical school in parallel with his duties as an Associate Professor of Physics. Not only did he score at the top of his entire class but also during his last year of the program, he generated five Physical Review Letters which is no mean feat for someone working full-time at physics. In short, he is a very unusual individual.

Exhibit H

He and Seglie have worked together for many years and have just completed a major chapter for me as part of a treatise on heavy ion science that Plenum Press is publishing. It will be the definitive work on these grazing collisions for a great many years to come, and it is on that basis that I feel quite confident in recommending them to you for a Physics Today article.

I am contacting you at their request and have told them that I have forwarded the outline to you. If you have some interest in this, just drop me a note or give me a call at 203-436-3026 and I will put you in touch with the two of them directly.

In the meantime I must tell you that Jeff Schmidt did an absolutely outstanding job in editing the paper I had prepared on Neutrons in Science and Technology for presentation at the 40th Anniversary of Fermi's First Reactor at the University of Chicago. I made no changes whatsoever in what he had done. You really do not know how unusual that is because, almost inevitably, I end up having giant hassles with editors who work over my papers. Let me then put in a very strong plug for Jeff.

With warmest personal regards.

Sincerely yours,

Allan
(nr)

D. Allan Bromley

DAB:lal

A terrific article!

SB
11/7/98

CATALYSIS AND SURFACE SCIENCE

Excellent intro.

Great bank

In 1835 the Swedish chemist Jöns Jakob Berzelius coined the term "catalysis" to describe chemical reactions in which progress is affected by a substance that is not consumed in the reaction and hence is apparently not involved in the reaction. Both the term and the phenomenon were heavily debated throughout the rest of the 19th century until the German chemist Wilhelm Ostwald proposed a now generally accepted definition: "A catalyst is a substance that accelerates the rate of a chemical reaction without being part of its final products." The catalyst acts by forming intermediate compounds with the molecules involved in the reaction, offering them an alternate, more rapid path to the final products.

Catalysis is of vital importance. In biological systems, enzymes play a catalytic role. In the chemical and petroleum industries, key processes are based on catalysis. And in environmental chemistry, catalysts are essential to breaking down pollutants such as automobile and industrial exhausts.

If the catalyst and the reacting species are in the same phase (for example, liquid), then the process is known as homogeneous catalysis. More relevant in technical processes is heterogeneous catalysis, where the catalyst is a solid and the reacting molecules interact with its surface from the gaseous or liquid phases.¹ The economic significance of heterogeneous catalysis is reflected in the fact that the worldwide market for solid catalysts in the automotive, petroleum and other industries is on the order of \$100 billion per year and growing rapidly.²

Typically, the chemical transformation occurs in a flow reactor through which the reacting species pass. Atoms in the surface of the catalyst may form chemical bonds with atoms in impinging molecules, a phenomenon known as chemisorption. If existing bonds in the molecule break, the process is called dissociative chemisorption. The chemisorbed species are mobile on the surface and may bond to other particles, thus leading to new molecules, which eventually leave the surface (desorb) as the desired reaction products.

Detailed identification and characterization of these elementary processes is hampered, however, by fundamental problems. The reacting systems exist merely as two-dimensional phases for which most of the usual methods

Modern surface physics is transforming the black art of catalysis, revealing a fascinating choreography followed by reacting atoms and molecules.

Gerhard Ertl and Hans-Joachim Freund

of investigation are not well suited, and so researchers have had to develop novel surface-sensitive tools. (See the box on page *****) Furthermore, the surfaces of "real" catalysts are typically rather inhomogeneous. Because their efficiency increases with their total sur-

face area (as long as no diffusion or other limiting transport process is required), finely divided particles are usually applied to a more-or-less inert support material. (See figure 1.) Catalytic activity is often further enhanced by the addition of compounds called promoters.

Making ammonia

The synthesis of ammonia (NH_3) from the elements nitrogen (N_2) and hydrogen (H_2) represents the first—and still one of the most important—large-scale industrial processes based on heterogeneous catalysis.³ This reaction was first realized in 1909 by Fritz Haber, on a laboratory scale. Only four years later, due mainly to work performed by Carl Bosch and Alwin Mittasch, the first industrial plant of Badische Anilin und Soda-Fabrik, one of today's big chemical companies, started operations. Currently, 150 million tons of ammonia are produced per year worldwide, most of which is converted into fertilizer.

The catalyst developed by Mittasch was essentially iron with small amounts of potassium, aluminum and calcium added as promoters. With only minor modification, it is still in use in most ammonia-producing plants. It is only in recent years that catalysts based on supported ruthenium particles with alkali metal promoters have emerged as possible alternatives; they were first proposed by Japanese researchers.

Despite its great complexity, the mechanism of this important reaction can now be regarded as known. The reaction rate can be successfully modeled on the basis of the kinetics of the elementary steps involved, as figure 2 illustrates.⁴

The necessary information was obtained largely by surface science modeling. An actual catalyst is complex, consisting of small solid particles supported on oxide powders exposing various crystal planes, usually with poorly defined composition and morphology. Consequently, model systems must be developed. By "model," we mean real but simple systems. The simplest model system would be a well-defined single crystal surface whose structure may be varied by choosing different surface orientations. Furthermore, by introducing defects and by modifying the crystal's chemical composition, the morphology of the surface may be changed. The material gap between the models and

Nice intro

(BASF)
ok?

Are these 2 different depts??

GERHARD ERTL is director of the department of physical chemistry, and HANS-JOACHIM FREUND is director of the department of chemical physics, at the Fritz Haber Institute of the Max Planck Society in Berlin.

Exhibit I

TRENDS IN ELECTROMECHANICAL TRANSDUCTION

Nicely
done!

-SB 6/2/98

In today's world, it is nearly impossible to avoid contact with electromechanical sensors and actuators over the course of the day, although we rarely recognize them. They drive the keyless entry systems, the light switches that respond to sound or motion, the detectors in cars that determine whether seat belts are fastened and the sound-receiving and sound-generating parts of the telephone, to name just a few examples.

Electromechanical transducers are devices in which one connection to the environment conducts electrical energy and another conducts mechanical energy. Examples include microphones, loudspeakers, accelerometers, strain gauges, resistance thermometers, solenoid valves and electric motors.

There are many ways to categorize transducers. The largest breakdown divides them into sensors and actuators. Transducers used to monitor the state of a system, ideally without affecting that state, are sensors. Transducers that impose a state on a system, ideally without regard to the system load (the energy drained by the system), are actuators. However, this division, although useful, doesn't get to the heart of what makes transducers work.

It is useful to consider transducers from the perspective of energy conversion mechanisms, an approach that also yields two broad classes of devices: those based on geometry and those based on material properties. An example of a geometry-based transducer is a condenser microphone, which is a parallel-plate capacitor with a DC voltage bias between the plates. Sound causes one of the plates to move, thus changing the gap between the plates. This change dynamically alters the capacitance and produces an output voltage. An example of a material property-based transducer is a piezoelectric accelerometer. Piezoelectric materials are those in which there is coupling between the electric field and the mechanical field so that imposed electric fields cause dimensional changes and applied material strains produce voltages. In a piezoelectric accelerometer, acceleration strains the transduction material, giving rise to an electric field that is sensed as a voltage. Of course, these two broad classes may be

The demand for more sophisticated sensors and actuators in industrial equipment and consumer products is behind today's push for new transducer materials and geometries.

By Ilene J. Busch-Vishniac

further refined either in terms of the function of the transducer (for example, sensing fluid flow) or in terms of narrower classes of energy conversion (for example, transduction based on piezoelectricity). The table on page ***** shows the main electromechanical transduction mechanisms. Here the definition of "mechanical" is very liberal, including thermal and optical phenomena.

The 1970s and 1980s brought dramatic changes in electronics and signal processing techniques, but only modest changes in electromechanical transducers. As a result, transducers are commonly the least reliable and most expensive elements in measurement and control systems. For this reason, there is a growing emphasis on the field of transduction, and significant changes are beginning to emerge.

Pervasiveness

In the last few decades, electronics have been incorporated into products of all sorts. Their growth in consumer products has been driven by two phenomena: the public's perception that low-technology (nonelectronic) devices are not as good as high-technology devices, and the push for products with "intelligence."

Low-technology devices whose market is being overtaken by high-technology counterparts range from office equipment such as staplers and pencil sharpeners to kitchen appliances such as juice squeezers. In many cases, we are replacing purely mechanical functions performed under human control by automated electromechanical operations, leading to the introduction of sensors and actuators.

The growing market for intelligent products (those with a decision-making process) comes from the desires to automate some functions that people perform and to add functions that people cannot perform. For instance, although people can control room lights by hand, they often prefer to employ motion or sound detectors and control electronics instead. Examples of intelligent products that extend certain functions beyond standard human performance are smoke detectors, automobile airbags and clothes dryers with autodry cycles.

The growth in transducer markets has been rapid and is predicted to continue on its current pace through the turn of the century. The sensor market alone rose to become a \$5 billion a year industry by 1990, with projections for a \$13 billion worldwide market by the year 2000—an 8% annual growth rate over the decade.¹

ILENE BUSCH-VISHNIAC is Temple Professor of Mechanical Engineering at the University of Texas at Austin and a visiting professor of aerospace and mechanical engineering at Boston University.

From: Stephen Benka
To: Barbara Levi, Bert Schwarzschild, Charles Day, E...
Date: Wed, Jul 14, 1999 1:38 PM
Subject: ASA cites PT articles

I just learned that the Acoustical Society of America's "Science Writing Award to a Professional" went to Ilene Busch-Vishniac for her July 1998 article in PT, "Trends in Electromechanical Transduction." Jeff was the editor.

The previous such award from the ASA went to Mathias Fink for his March 1997 article in PT, "Time-Reversed Acoustics." Bert was the editor.

Well done, and well earned.

--Steve

CC: Dr. James Stith, Gary Squires, Jeff Bebee, Marc...

— Jeff, this article is very good—
you've brought it a long way. —Steve

25 pages
16 Nov. 99

SB

11/17/99

MOTILE BEHAVIOR OF BACTERIA

Escherichia coli is a single-celled organism that lives in your gut. It is equipped with a set of rotary motors, each of which is only 45 nm in diameter and drives a long, thin, helical filament that extends several cell body lengths out into the external medium. The assemblage of motor and filament is called a flagellum. The concerted motion of several flagella enables a cell to swim. A cell can move toward regions that it deems more favorable by modulating the direction of rotation of its flagella. It does this modulation by measuring changes in the concentrations of certain chemicals in its environment (mostly nutrients) and deciding whether life is getting better or worse. Thus, in addition to rotary engines and propellers, *E. coli*'s standard accessories include particle counters, rate meters, and gear boxes. This microorganism is a nanotechnologist's dream. Let us examine the features that make it so, from the perspectives of several scientific disciplines: anatomy, biology (genetics), chemistry, and physics.

What made the discovery of *E. coli* and its properties possible? The tale has two geneses. One involves light microscopy and begins in the 17th century, when Antoni van Leeuwenhoek first observed swimming bacteria.¹ (See box 1.) The other involves molecular genetics and begins in the 20th century, when Joshua Lederberg demonstrated that bacteria have sex, as evidenced by their genetic recombination.² (See box 2.) Lederberg studied *E. coli* and *Salmonella typhimurium*, two closely related organisms. They are the principal subjects of work now being done on bacterial chemotaxis (the motion of bacteria toward chemical attractants or away from chemical repellents). That work has yielded an important model for understanding organisms' behavior at the molecular level.

Anatomy of *E. coli*

E. coli (like *S. typhimurium*) is a cylindrical organism with hemispherical endcaps (as figure 1 shows). The cell, which weighs only 1 picogram, is about 70% water. Some strains are flagellated and motile; others are nonflagellated and nonmotile. When motile cells are grown in a rich medium (such as salts plus a mixture of amino acids), they swim in the direction of their long axis at a rate of about 35 diameters per second, often changing course but rarely stopping.

The chromosome of *E. coli* consists of a single double-stranded chain of DNA about 700 times longer than the body of the cell. There are 4 639 221 base pairs specifying 4288 genes, most of which encode proteins.³ The functions

E. coli, a self-replicating object only a thousandth of a millimeter in size, can swim 35 diameters a second, taste simple chemicals in its environment, and decide whether life is getting better or worse.

Howard C. Berg

the mother cell is replaced by two daughters, essentially identical to the daughters of the previous generation. The molecules of DNA in the members of a given set of descendants are identical except for mutations, which occur spontaneously for a given gene, at the rate of about 10^{-7} per generation.

If well fed and held at the temperature of the human gut (37 °C), *E. coli* can synthesize and replicate everything it needs to make a new copy of itself in about 20 minutes. Thus, if we start at noon today with one cell (and lots of food), by noon tomorrow there will be $2^{72} = 4.7 \times 10^{21}$ cells—enough to pack a cube 17 meters on a side! This replication rate explains why single cells dispersed on the surface of the hard form of nutrient agar soon become mounds of cells (colonies) a millimeter or so in diameter and why, in soft agar, the motile progeny of a single cell soon populate the entire plate.

Genetic analysis

A fully functional cell line, or strain, found in the wild is called a wild type. If a mutant cell is found that is missing a particular function, the gene carrying the mutation is named for that missing function. For example, a *che* gene is one encoding a protein (polypeptide) required for chemotaxis. A cell with such a defect develops flagella and swims, but it does not respond normally to chemical stimuli. The first gene of this type to be identified is called *cheA* (in italics), the second is called *cheB*, and so on through the alphabet. When the protein encoded by the gene is identified, it is called CheA (capitalized and in roman type).

In bacterial chemotaxis, besides the *che* genes, we encounter *fla* genes, so named for their defects in the synthesis of flagella (these genes are now called *flg*, *flh*, *fli*, or *flj*, because there turned out to be more than 26). There are also *mot* genes, named for defects in motility, or generation of torque. And there are a variety of genes that specify specific chemoreceptors; one, for example, *tar*, is a gene encoding the chemoreceptor Tar, which is so named because it mediates taxis toward the amino acid aspartate and away from certain repellents. The soft-agar plate shown in box 2 was inoculated with wild-type cells at the top, cells of a *tsr* (the *s* stands for serine) strain at the right, cells of a *tar* strain at the bottom, and cells of a smooth-swimming *che* strain at the left.

HOWARD BERG is a professor of molecular and cellular biology, and of physics, at Harvard University in Cambridge, Massachusetts, and a member of the Rowland Institute for Science.

This can open on either a right or left-hand page.

*Another excellent article!
- Steve 11/23/99*

*First pages
23 Nov. 99*

PHYSICS AND THE INFORMATION REVOLUTION


In the fourth century BC, a young man named Pythias was condemned to death by Dionysius, the tyrant of Syracuse, for plotting against him, but Pythias was granted three days' leave to go home to settle his family's affairs after his friend Damon agreed to take his place and be executed should Pythias not return. Pythias encountered many problems but managed to return just in time to save Damon. Dionysius was so struck by this remarkable and honorable friendship that he released them both.

The decades-old friendship between computer technology and physics has also been a remarkable and honorable one, and it, too, has produced salutary results. Present-day experimental and theoretical physicists depend on computing, and have incurred a debt that they have repaid many times over by making fundamental contributions to advances in hardware, software, and systems technologies. (Figure 1 shows an experimental computer and one of its developers.)

In this article, we discuss the physical and economic limits to the geometrical scaling of semiconductor devices that has been the basis of much of the computer industry's progress over the last 50 years. We then look at some of the options that may be available when we come up against fundamental physics barriers sometime after 2010.

Disruptive technology

The first stored-program electronic computer, ENIAC (the Electronic Numerical Integrator and Computer), was built in 1946. A major triumph for vacuum-tube technology, ENIAC could add 5000 numbers in one second. At that rate, it could calculate the trajectory of an artillery shell in only 30 seconds, whereas an expert human with a mechanical calculator would have needed some 40 hours to complete the task. The machine was large (see figure 2)—and expensive. ENIAC . . .

- ▷ Contained 17 468 vacuum tubes
- ▷ Weighed 60 000 pounds
- ▷ Occupied 16 200 cubic feet
- ▷ Consumed 174 kilowatts (233 horsepower) 

The amount of energy ENIAC expended to compute a single shell trajectory was comparable to that of the explosive discharge required to actually fire the shell. ENIAC was still the fastest computer on Earth nine years later, when it was turned off because the US Army could no longer justify the expense of operating and maintaining it.

JOEL BIRNBAUM is chief scientist at Hewlett-Packard, in Palo Alto, California. STANLEY WILLIAMS is *****a* or *the*?***** senior principal laboratory scientist at Hewlett-Packard Laboratories.

Quantum physics holds the key to the further advance of computing in the postsilicon era.


Joel Birnbaum and R. Stanley Williams

Even in the early days of ENIAC, though, technologists dreamed of smaller, faster, and far-more-reliable computers. An article by a panel of experts in the March 1949 issue of *Popular Mechanics* confidently predicted that someday a computer as powerful as ENIAC would contain only 1500 vacuum tubes, weigh only 3000 pounds, and require a mere 10 kilowatts of power to operate. Such a machine would be about the size and weight of an automobile, said the experts, with power consumption to match. What was intended to be a bold projection seems quaintly conservative to us now. These days, a palmtop computer is thousands of times more powerful than the ENIAC was.

The reason for the experts' now-laughable error is that their prediction was based on the wrong foundation—reasonable extrapolation of the in-place vacuum-tube technology. The transistor, which had already been invented and represented a disruptive technology—that is, a technology that could totally displace vacuum tubes in computers, as electronic calculators later replaced slide rules—was completely ignored.

By 1949, after 40 years of development, vacuum-tube technology was mature, and the associated manufacturing infrastructure was enormous. In 1938 the vacuum tube had still been a decade away from its ultimate accomplishment. But already there was a significant search for something that would be better: a solid-state switch. The development of that switch required a great deal of basic research, both in materials purification and in device concepts.

Even though transistors as discrete devices had significant advantages over vacuum tubes and progress on transistors was steady during the 1950s, the directors of many large electronics companies believed that the vacuum tube held an unassailable competitive position.

Their companies were eventually eclipsed by the ones that invested heavily in transistor technology R&D and that were poised to exploit new advances. As we shall see, there are eerie parallels with the situation today. 

Moore's law

Gordon Moore of Intel Corp was the first to quantify the steady improvement in gate density when he noticed that the number of transistors that could be built on a chip increased exponentially with time. (See figure 3.) Over the past 24 years, that exponential growth rate has corresponded to a factor-of-four increase in the number of bits that can be stored on a memory chip in every device generation of about 3.4 years—an increase of 16 000 times!

This exponential growth in chip functionality is closely tied to the exponential growth of the chip market,

From: Stephen Benka
To: bgl, tfeder, jeff
Date: 24 Jul 1998 (Fri) 10:31
Subject: Physics Update candidates for Sept

PLEASE COMMENT, RANK (1-8) & RETURN TO STEVE BY 5PM MONDAY, 7/27. THANKS!

PHYSICS NEWS UPDATE items for the Sept PT by Phillip F. Schewe and Ben Stein

ACOUSTIC SURGERY is the use of sound in place of the scalpel to perform such tasks as destroying tumors and stopping internal bleeding. At last week's joint meeting in Seattle of the International Congress on Acoustics and the Acoustical Society of America, Gail ter Haar of the Royal Marsden Hospital in England (011-44-181-642-6011) described a clinical trial in which focused sound waves destroyed parts of liver, kidney, and prostate tumors in 23 patients. Just as sunlight sent through a magnifying glass can burn a leaf placed at the spot where the light converges, sound broadcast through a specially shaped set of speakers can converge inside the body to create a region of intense heat that can destroy tumor cells. The spot is so small that there is only a boundary of six cells between destroyed tissue and completely unharmed tissue--a precision that is finer than any scalpel. Ter Haar said the next phase is to attempt complete destruction of tumors in the liver and prostate. (See www.acoustics.org/haar.htm) Meanwhile, Roy Martin of the University of Washington (206-685-1883) discussed the use of ultrasound to stop internal bleeding in the liver. Just as a grill heats a steak, the sound waves heat the bleeding area to create chemical and physical changes that cauterize it. Otherwise, liver surgery is often hampered by bleeding, Martin said. BPS

A NEW FORM OF SOLID CARBON, based on carbon-36 molecules, has been created by Alex Zettl and his colleagues at LBL. The new Bucky-lite materials---liquids, powders, and films---were extracted from the general stew of fullerenes created in an electrical arc flashing between two graphite electrodes. The C-36 molecule is under more strain than the better-known C-60 molecule and this, the researchers believe, should lead to interesting electrical and chemical properties. C-36 solids, spiked with alkali metals, might be superconducting at temperatures as high as for ceramic superconductors. (Nature, 25 June 1998.) PFS

SUPERFLUIDITY WITH ONLY 60 ATOMS has been demonstrated by scientists at the Max Planck Institute in Gottingen. They dissolved molecules of oxygen carbon sulphide (OCS) into a mixture of He-3 and He-4 atoms held at a temperature below the superfluid point of He-4 but above that for He-3. From the infrared spectrum emitted by the OCS, the researchers deduce that the molecule is rotating freely inside a cocoon of superfluid He-4 atoms only about 2 layers thick, which in turn resides within a He-3 droplet. In effect, the He-4 acts as a vacuum in which the OCS turns without friction. (Science, 27 March.) PFS

NEW REASONS TO SEARCH FOR EXTRA DIMENSIONS. Grand Unified Theories (GUTs) are the framework wherein three of nature's forces---the strong, the weak, and the hypercharge forces (the latter being a better way of describing the electromagnetic force at energies above several hundred GeV---come together as facets of one underlying force. Unfortunately, these theories fully come into play only at the very high energies (10^{16} GeV) which prevailed in the very early (and hot) universe. Only at such high energies do these three forces have equal (unified) strengths. However, a new proposal by three physicists at CERN (contact Keith Dienes, keith.dienes@cern.ch, 011-44-22-767-2459) makes the case that the unification energy can be considerably lower if extra spacetime dimensions exist. Such dimensions are a generic prediction of string theory. Normally we wouldn't detect such dimensions because they would be curled up (or compactified) into balls about 10^{-35} m across, far smaller than the best resolution of today's accelerator experiments, roughly 10^{-18} m. However, the CERN physicists point out that if the extra dimensions are significantly larger, on the order of 10^{-19} m, then their effect would be to lower the GUT unification energy to the TeV-scale (10^3 GeV). This in turn would allow GUT physics to be observed directly in the next round of accelerator experiments. Signatures of the large extra dimensions would be striking. Once an elementary particle, such as a Z boson (one of the particles carrying the weak force), is accelerated to TeV-scale energies, its

Exhibit J

From: Stephen Benka
To: Barbara Levi, Jeff Schmidt, Toni Feder
Date: 1/3/00 11:27am
Subject: 12 update candidates for Feb

Please rank them, comment, and return today. Thanks!

--Steve

PHYSICS NEWS UPDATE items for PT by Phillip F. Schewe and Ben Stein

MEASUREMENTS OF THE COSMIC MICROWAVE BACKGROUND (CMB) provide new evidence that the expansion of the universe is accelerating. One of the greatest issues in cosmology is whether the current expansion will continue, reverse, or proceed at a diminishing rate. Supernova observations two years ago suggested that not only would the expansion not reverse but that it was in fact getting faster (Update 361). The new CMB mappings, carried out with telescopes on mountains and on balloons, reveal that the temperature of the microwave background varies in clumps with an angular size of about one degree on the sky, a result indicative of an overall "flat" geometry for the universe (New York Times, 26 November 1999). Another way of saying this is that the observed energy density of the universe is apparently equal to the critical density value of about 10^{-29} gm/cm³. But the amount of known matter (luminous and dark) is insufficient for producing a flat geometry, so additional energy, probably hiding in the universal vacuum, is needed. This energy, according to many theorists, would exert an effect equivalent to a repulsive form of gravity, thus working against the mutual gravitational attraction of galaxies. Much of the new work is available only in preprint form. For example, papers for one of the experiments, the "Boomerang" collaboration, which measures the CMB with a balloon-mounted detector, can be found on the Los Alamos server (Melchiorri et al., PFS

COOPERATIVE EVAPORATION, a process whereby droplets on a substrate do not evaporate independently but in a coordinated fashion, has been observed for the first time by physicists at the University of Konstanz (Claudia Schafle, claudia.schafle@uni-konstanz.de). The researchers begin by laying down a periodic array of diethylene glycol drops 0.75 microns in radius and spaced by 2.5 microns (see figure at www.aip.org/physnews/graphics). (Condensing the droplets out of a supersaturated vapor onto a patterned grid of adsorption sites imposed on the surface with microcontact-printing was itself something of a feat). The Konstanz scientists found that some rows of droplets evaporated faster than other rows, leading to a sort of "superstructure." In other words, some drops would survive at the expense of the preferential evaporation of other drops in a methodical way. Previously scientists have considered how gas sensors comprised of liquid droplet arrays could be designed. The droplet size in such sensors can be made sensitive to environmental conditions by selective uptake of certain molecules. When monitoring the average droplet size by light scattering techniques, the concentration of the molecules can be determined. But for this to work the cooperative evaporation effect will have to be taken into effect. (Schafle et al., Physical Review Letters, 20 December 1999; Select Article.) PFS

From: Stephen Benka
To: Jeff Schmidt, Toni Feder
Date: 1/28/00 11:13am
Subject: 12 Update candidates - pls reply today

PHYSICS NEWS UPDATE items for March PT by Phil and Ben

AMPLIFYING AN ATOM WAVE while maintaining its original phase has been demonstrated for the first time, bringing about an atom laser that is the closest equivalent yet to an optical laser. The first atom lasers (Update 305) were passive devices: researchers simply prepared a Bose-Einstein condensate of atoms (Update 233), and then extracted some of the BEC atoms to form a beam. In the latest round of demonstrations, two research groups (one at MIT and one at the University of Tokyo) have independently demonstrated an atom laser that amplifies its initial beam, in a way that's remarkably similar to how optical lasers augment an initial light wave. Unlike light, however, atoms cannot be created from the vacuum, so researchers must rely on a pre-existing supply of atoms to serve as the initial beam to be amplified. In the MIT demonstration, researchers shine a pair of laser pulses on a sodium BEC. First, some of the BEC atoms absorb a photon from a high-frequency beam and emit a photon towards a lower-frequency beam. These atoms recoil in the same direction, forming a weak atom wave. Then the lower-frequency beam is shut off, and some of the other BEC atoms absorb light from an intensified pulse coming from the high-frequency laser. The presence of the initial atom wave stimulates these atoms to emit a photon in the direction of the lower-frequency beam. This resulted in a phase-coherent amplified beam about 4 times as strong as the initial atom wave. The Tokyo group demonstrated similar results with a rubidium-87 BEC. In both demonstrations, the amplification is limited by the size of the BEC, which is depleted in the process. However, an atom-wave amplifier promises improvements in such applications as atom-wave gyroscopes and lithography. (Inouye et al., Nature, 9 December 1999; Kozuma et al., Science, 17 December.) BPS

HIGH PROTON POLARIZATION, up to 32%, has been achieved at liquid-nitrogen temperatures (77 K) and with modest 0.3-Tesla magnetic fields in an experiment at Kyoto University in Japan. Among a proton's attributes is the orientation of its intrinsic spin; this directionality can come into play when the proton interacts with the spins of other particles or with a radio frequency field. For comparison, proton polarization levels in MRI medical imaging is a paltry .0003 % (still good enough for spotting tumors) using room temperature and magnetic fields typically of 1 Tesla (10,000 gauss). Targets for particle physics using accelerators can achieve polarizations of up to about 70% but even higher fields (2 or 5 T) are needed as well as low liquid-helium temperatures (typically 0.3 K). In the Kyoto experiment, the electrons in pentacene (an aromatic organic molecule chain) are polarized optically with a laser beam. Next, microwaves force the polarization to be transferred to protons in the molecules. The researchers (M. Iinuma, 011-81-824-24-7373, iinuma@photon.hepl.hiroshima-u.ac.jp) suspect that their approach will find applications in particle physics (where targets polarized in smaller fields and warmer temperatures would permit the detection of slower charged particles amid high intensity beams) and in chemistry / biology (where the new method provides higher sensitivity than the existing NMR). Polarized

From: Stephen Benka
To: Barbara Levi, Jeff Schmidt, Toni Feder
Date: 4/3/00 11:53am
Subject: 10 Update candidates - please return today

PHYSICS NEWS UPDATE items for PT by Phillip F. Schewe and Ben Stein

ULTRAVIOLET LASER AT DESY. A free electron laser (FEL) built at the DESY lab in Hamburg by the international TESLA collaboration has achieved a beam of radiation with a wavelength of only 93 nm. FELs normally operate in the following way: a beam of energetic electrons passes through a series of S curves (an undulator) where they are made to radiate light which is stored inside a mirrored cavity. The photons, reflecting back and forth in the cavity, help to stimulate the electrons to radiate even more, thus amplifying the higher-energy light beam. The resultant light is tunable and coherent. At wavelengths below about 150 nm, however, mirrors are not effective and light accumulation cannot occur. Scientists of the TESLA collaboration have now succeeded at DESY in carrying out a scheme suggested 20 years ago: give up the accumulation of light in an optical cavity and let the radiation amplify itself in a single pass as the electrons travel through a very long undulator section, thereby increasingly interacting with the radiation. The product is essentially coherent synchrotron radiation. The TESLA collaboration consists of 38 institutes from 9 countries. Major hardware contributions came from DESY, Italy, France and the USA (US institutes: ANL, Cornell, Fermilab, UCLA). The work with the UV laser is part of an effort to produce an x-ray laser with 6-nm light (by the year 2003). And beam-optics lessons learned might in turn contribute to a more ambitious plan to develop a next-generation linear 500-GeV electron linear collider with integrated x ray lasers called TESLA. (Joerg Rossbach, rossbach@desy.de; www.desy.de/pr-info/News; figure at www.aip.org/physnews/graphics) PFS

SNOWBALLS SURVIVE IN HELLISH CONDITIONS. Many of the unique and unusual properties of liquid water at ambient conditions are due to the ability of water molecules to form hydrogen bonds, which in turn causes the oxygen atoms to be arranged in a three dimensional diamond-like network. However, under extreme pressures the properties of water can change drastically. For example, although water ice normally melts at 0 C at ambient conditions, at a pressure of 10 Giga-pascals (10,000 atm) water remains "frozen" up to 320 C! New computer simulations carried out at the Lawrence Livermore National Laboratory (Eric Schwegler, 925-424-3098, schwegler@llnl.gov) have explored what happens to the microscopic structure of the compressed liquid, in a region of the phase diagram where experimentally determined structural data do not exist. These simulations indicate that when the liquid is squeezed up to a pressure of 10 GPa, the hydrogen bonds and oxygen network are substantially altered. At this high pressure, each water molecule is close packed and surrounded by 12.9 molecules, as opposed to 4.5 neighbors for ambient conditions. (E.Schwegler, G.Galli, F.Gygi, Phys. Rev. Lett., 13 March 2000; figure at www.aip.org/physnews/graphics. Select Article.) PFS

From: Stephen Benka
To: Barbara Levi, Jeff Schmidt, Toni Feder
Date: 4/27/00 12:08pm
Subject: 6 Update candidates for June

PHYSICS NEWS UPDATE items for PT by Phillip F. Schewe and Ben Stein

AN ELECTRICAL CIRCUIT MIMICS YEN-DOLLAR FLUCTUATIONS. In one of the latest examples of econophysics (Update 395), Hideki Takayasu of the Sony Computer Science Laboratories in Japan (takayasu@csl.sony.co.jp) and his colleagues have designed an electrical circuit with voltage fluctuations that are highly similar to the fluctuations in a plot of the yen-dollar exchange rate. The Sony goal is to build a fast calculator for the prices of options which depend on exchange rates. In the world of currency exchange, options serve as an insurance policy for a future exchange rate. Buying an option means that you have the right to purchase currency at some point in the future at a predetermined price, even if the actual exchange rate at the time is against your favor. At the recent APS meeting in Minneapolis, Takayasu showed that graphs of yen-dollar fluctuations look remarkably similar at different time scales, suggesting a fractal behavior. The researchers then designed an inexpensive electrical circuit that produces highly similar fluctuations by employing naturally occurring electrical noise as the seeds for random variations. Their circuit costs approximately \$5, and it can estimate yen-dollar fluctuations as fast as the \$10,000 workstations that are running mathematical simulations of the exchange rates. PFS

SUNSPOTS ON THE FAR SIDE OF THE SUN can be detected through helioseismic holography, a process in which the sound waves that rumble through the body of the sun are slightly distorted when they reflect from the magnetically active regions around sunspots. In March of 1998, data from the orbiting Solar Heliospheric Observatory (SOHO) were processed with an algorithm that deduces the locations of those out-of-sight sunspots. Charles Lindsey and Douglas Braun of the Solar Physics Research Corp. report that their calculations of presumed sunspot positions on the far side of the sun correlated well with actual spots that later swung into view (revolving along with the sun on its 27-day rotation). The researchers expect that eventually this method will be able to give valuable advance warnings of the type of space storms that arise from the solar flares and coronal mass ejections associated with the active regions on the sun's surface. Predicting "space weather" in the Earth-sun environment is important since astronauts' lives, the survival of satellites, and the stable operation of terrestrial power grids are tied to the particles and radiation that comes rushing at us from the sun. (Lindsey and Braun, Science, 10 March 2000.) PFS

THE MOST POWERFUL TRANSMISSION ELECTRON MICROSCOPE (TEM) has been built by a team led by Akira Tonomura at Hitachi's Advanced Research Lab. in collaboration with the Japan Science and Technology Corporation. In this kind of "field-emission" TEM, electrons are forced out of a cathode and accelerated

Please
return by
1:00 pm
today!
Thanks

MARCH 1998

PHYSICS TODAY

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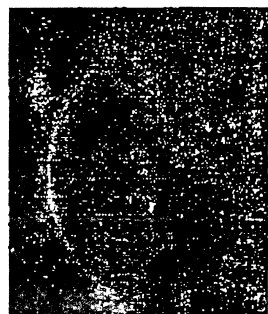
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The Comprehensive Test Ban Treaty
 An agreement to prohibit all nuclear explosions of any yield, at any location, for any purpose and for all time has been signed by the President and is now in the hands of the US Senate — *Jeremiah D. Sullivan*
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 In a technical conference related to nuclear test ban negotiations in the late 1950s, Soviet and US scientists disagreed along national lines about the capabilities of scientific instruments, the validity of theories and the handling and interpretation of data — *Kai-Henrik Barth*
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 Despite the claims of most of the founding fathers, the appeal at a fundamental level to observers and measurement, so prominent in orthodox quantum theory, is not needed to account for quantum phenomena — *Sheldon Goldstein*
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COVER Landsat-4 image of the tunnel testing zone at the nuclear test site at Lop Nor, China. The image is draped over a digital elevation model of the area. Superimposed is the seismogram of a large (magnitude 6.6) nuclear test at that site, recorded at Obninsk, near Moscow. See the articles on pages 24 and 34. (Seismic data courtesy of Christel Hennet, Gregory van der Vink and Danny Harvey of the IRIS consortium. Image analysis by Vipin Gupta, Sandia National Laboratories.)

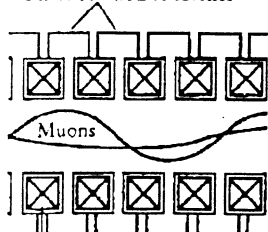


p. 17



p. 42

Phase rotation of cavities



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Exhibit K

From: Jeff Schmidt
To: SFUNK
Date: 15 Sep 1997 (Mon) 18:00
Subject: Q&A - Tomorrow -Reply

Hi Susan --

I plan to work at home Tuesday, but I would like to participate in the Q&A meeting. Could you please get me on the telephone when the meeting starts? I plan to come in to the office on Thursday.

Thanks,
Jeff

>>> Susan Funk 09/15/97 09:38am >>>
Our bi-weekly Q&A meeting is scheduled for tomorrow, 16 September, beginning at 11:30 in the 3rd floor conference room. Thanks.

CC: jschmidt

Exhibit L

From: Jeff Schmidt
To: SBENKA
Date: 26 Mar 1998 (Thu) 12:03
Subject: Articles meeting -Reply

Yes, I would like to participate in the 2 pm articles meeting (by telephone).

Jeff

CC: RWEHRENB, JSCHMIDT

From: Jeff Schmidt
To: TGARY
Date: Mon, Aug 23, 1999 1:15 AM
Subject: Whereabouts - August 23-27, 1999 -Reply

Hi Tonya,

I plan to work in the office on Thursday 26 August and at home the other days. (I would like to participate by telephone in the Tuesday 2 pm meeting about the internet.) Thanks,

Jeff

CC: jschmidt

From: Jeff Schmidt
To: squarles
Date: 5/3/00 12:11pm
Subject: Staff Meeting, 5/4 (tomorrow) -Reply

Hi Sharon,

Yes, I am available. I would like to participate by telephone.

Jeff

CC: jschmidt

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